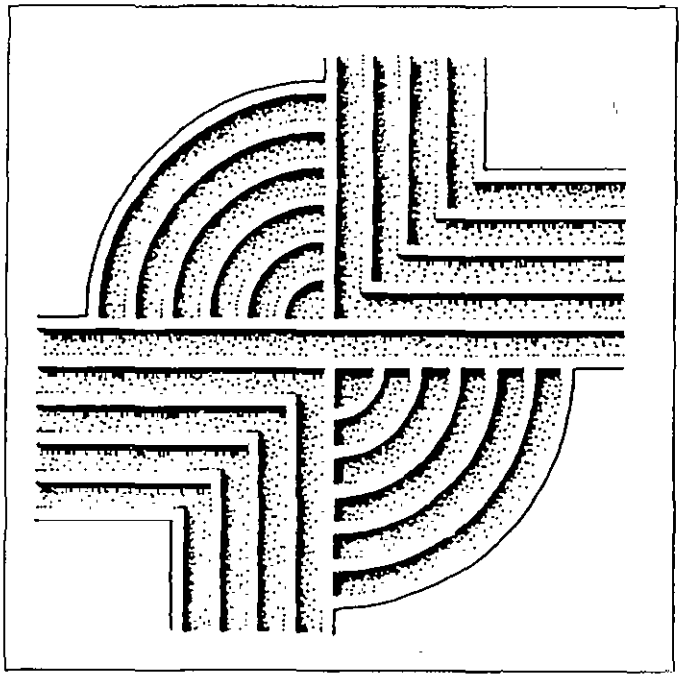
AN ARCHAEOLOGICAL SURVEY OF THE TWELVEMILE CREEK AND FOURTEENMILE CREEK INTERCEPTORS AND ASSOCIATED FORCE MAIN PROJECT, LEXINGTON COUNTY, SOUTH CAROLINA



CHICORA FOUNDATION RESEARCH SERIES 190

AN ARCHAEOLOGICAL SURVEY OF THE TWELVEMILE CREEK AND FOURTEENMILE CREEK INTERCEPTORS AND ASSOCIATED FORCE MAIN PROJECT, LEXINGTON COUNTY, SOUTH CAROLINA

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Chicora Research Contribution 190

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ABSTRACT

This study represents an intensive archaeological survey of three sewer line corridors proposed by the City of Lexington and studied at the request of ARM Environmental Services of Columbia, South Carolina. The study was conducted between June 10 and June 28, 1996. and is being done in order to fulfill compliance with the National Historic Preservation Act (Public Law 89-665, as amended by Public Law 96-515).

The first corridor, called the Fourteenmile Creek Interceptor, is a 24-inch sanitary sewer line running primarily along the south edge of Fourteenmile Creek from the Wise Ferry (S-1726) bridge (approximately station 441) east and north to a South Carolina and Electric and Gas transmission line corridor about 3200 feet south of the intersection of Corley Mill (S-68) and Stream (S-916) roads.

The second corridor, called the Twelvemile Creek Interceptor, is a 24-inch sanitary sewer line running entirely along the north edge of Twelvemile Creek from an existing pump station at station 248 on the east edge of the City of Lexington northeastward to the same terminus as the Fourteenmile Creek project.

The third leg of this project is a proposed 30-inch force main which begins at the terminus of the Fourteenmile Creek and Twelvemile Creek projects and follows a South Carolina Electric and Gas transmission line corridor southeastward to I-26. It then follows the interstate highway south-southeast to Interchange 115, Dixiana Road. It follows Dixiana Road east to Saxe Gotha Road and from there along a farm road to Old State Road (S-66). It then follows the Old State Road corridor to the existing Cayce Wastewater Treatment Plant.

The investigations included a review of the site files at the S.C. Institute of Archaeology and Anthropology and a request for information on historical surveys and NRHP properties from the S.C. Department of Archives and History. The study incorporated a combination of shovel testing at 100 and 200 foot intervals with a pedestrian survey of open tracts. Unfortunately, all of the corridors were poorly defined in the field, requiring that often the exact line had to be estimated.

The field survey found that virtually the entire Fourteenmile Creek corridor was situated in the first bottoms of the creek, which is typically only 5 to 10 feet in width. The soils were generally poorly drained and the line is situated within about 20 feet of the creek. Consequently, no archaeological sites were identified during this portion of the survey.

The sewer line is situated equally close to the Twelvemile Creek, although the creek itself is larger, in some areas measuring about 20 feet in width. While a number of archaeological sites had been previously recorded adjacent to this corridor, only three were found within the corridor — 38LX151, 38LX176, and 38LX187. Sites 38LX151 and 38LX187 are recommended potentially eligible for inclusion on the National Register of Historic Places and should be avoided through re-design of the project. If this is not possible then additional survey will be necessary to determine if the sites are eligible for inclusion on the National Register of Historic Places. Site 38LX176 has been previously recommended eligible, although this project appears to have little impact on the site. Consequently a series of steps are recommended to minimize the impact.

The force main project follows a number of heavily disturbed corridors and the potential for recovery of intact archaeological sites was recognized as very low. Although there are a number of archaeological sites recorded in the vicinity of the corridor, especially through the Congaree floodplain, only two archaeological sites,

38LX83 and 38LX150, will be impacted by this corridor. Site 38LX83, while previously determined eligible, will not be affected by this project. Site 38LX150 is recommended as not eligible for inclusion on the National Register and no additional management activities are recommended.

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ACKNOWLEDGEMENTS

While the work on these three sewer projects was conducted in compliance with various national historic preservation requirements, we wish to thank all of those involved for their support and interest in the project. In particular, Mr. Thomas Ballou of ARM Environmental Services provided guidance and assistance in deciphering the location of the three corridors. We also appreciate the interest and support of the City of Lexington, especially the Director of Public Works, Mr. Sidney Varn, Jr., P.E.

We would also like to thank Mr. Keith Derting and Ms, Nina Powell-Rice of the S.C. Institute of Archaeology and Anthropology for their assistance with the state site files and the use of the Institute's library. In addition, Dr. Lesley Drucker of AF Consulting was very kind in allowing us access to a variety of her previous reports in the Lexington area. Finally, Dr. Tracy Power of the S.C. Department of Archives and History graciously assisted us in the review of that agency's files for NRHP properties and previous historical surveys.

Participating in the work was Ms. Rachel Brinson who braved the heat and ticks to conduct the field study and Ms. Debi Hacker, who prepared the graphics and conducted the laboratory work on the collections. Both are to be thanked for their dedication and attention to detail.

INTRODUCTION

Survey Background

This investigation was conducted by Dr. Michael Trinkley and Ms. Rachel Brinson of Chicora Foundation, Inc. for Mr. Thomas Ballou of ARM Environmental Services. The project, which involves three separate legs, or corridors, of a sewer line, is situated entirely in Lexington County, primarily northeast, east, and southeast of the City of Lexington (Figures 1 and 2).

Chicora received a request for a budgetary proposal on May 6, 1996. A proposal was submitted on May 13, 1996. This proposal was accepted on May 28, 1996, although plans and specifications for the project were not available until about two weeks later. The fieldwork for the project was begun on June 10 and was completed on June 28. The laboratory processing of collections, preparation of necessary graphics and site forms, and completion of this report took place between July 1 and 3, 1996.

The first leg or corridor is that of the Fourteenmile Creek Interceptor — a 24-inch gravity feed sanitary sewer line running primarily along the south edge of Fourteenmile Creek from its origin just east of the Wise Ferry (S-1726) bridge east and north to a South Carolina and Electric and Gas transmission line corridor about 3200 feet south of the intersection of Corley Mill (S-68) and Stream (S-916) roads. It is at this point that the line will tie into a proposed pump station. The corridor, about 8.4 miles in length, is no more than 50 feet in width. Throughout this length the line will be placed about 20 to 25 feet from the creek, in the bottoms or floodplain. In several areas, specifically from about station 73+25 to 73+89, from station 119+29 to 120+30, and from station 211+22 to 212+86, the proposed sewer line crosses to the north edge of the creek, although it remains in very close proximity to the bank. The topography is generally low and the soils are typically poorly drained (Figures 3 and 4). An exception to this is east of Reed Street where the bottoms are very narrow and there is a steep slope up to the south.

The second survey corridor, called the Twelvemile Creek Interceptor, is also a 24-inch sanitary sewer line running entirely along the north or east edge of Twelvemile Creek from an existing pump station on the east edge of the City of Lexington northeastward 4.2 miles to the same terminus as the Fourteenmile Creek project. This line is also situated within about 20 feet of the creek edge, although in areas it appears to be surveyed as close as about 10 feet to the creek bank (Figure 5). The construction right-of-way is again no greater than 50 feet. Twelvemile Creek ranges from about 10 feet to upwards of 20 feet in width, exhibiting a stronger flow than Fourteenmile Creek (Figure 6). As a consequence its floodplain is somewhat larger and better developed. There is, however, about 0.5 mile of corridor north of Mineral Springs Road (S-106) where the line will be situated at the base of a steep up slope along a very narrow floodplain.

The third leg of this project is a proposed 30-inch force main which begins at the terminus of the Fourteenmile Creek and Twelvemile Creek projects and follows the same corridor as the Twelvemile project, running southward for a distance of 0.6 mile. In this section of the project the force main will be situated 8 feet to the east (toward the creek) of the Twelvemile Creek Interceptor, essentially occupying the same survey corridor. Upon reaching the South Carolina Electric and Gas transmission line north of US 378 (Figure 7), it begins to parallel the northeastern edge of the transmission line corridor, switching to the southwestern side south of US 378. It continues along this line for 2.0 miles to Mineral Springs Road, where is skirts the southern side of a pond in a pasture, before rejoining the transmission line. At US 1, about 1.8 miles to the south it leaves the transmission line corridor, running east on the south shoulder of the highway for 1000 feet, before again using the north edge of

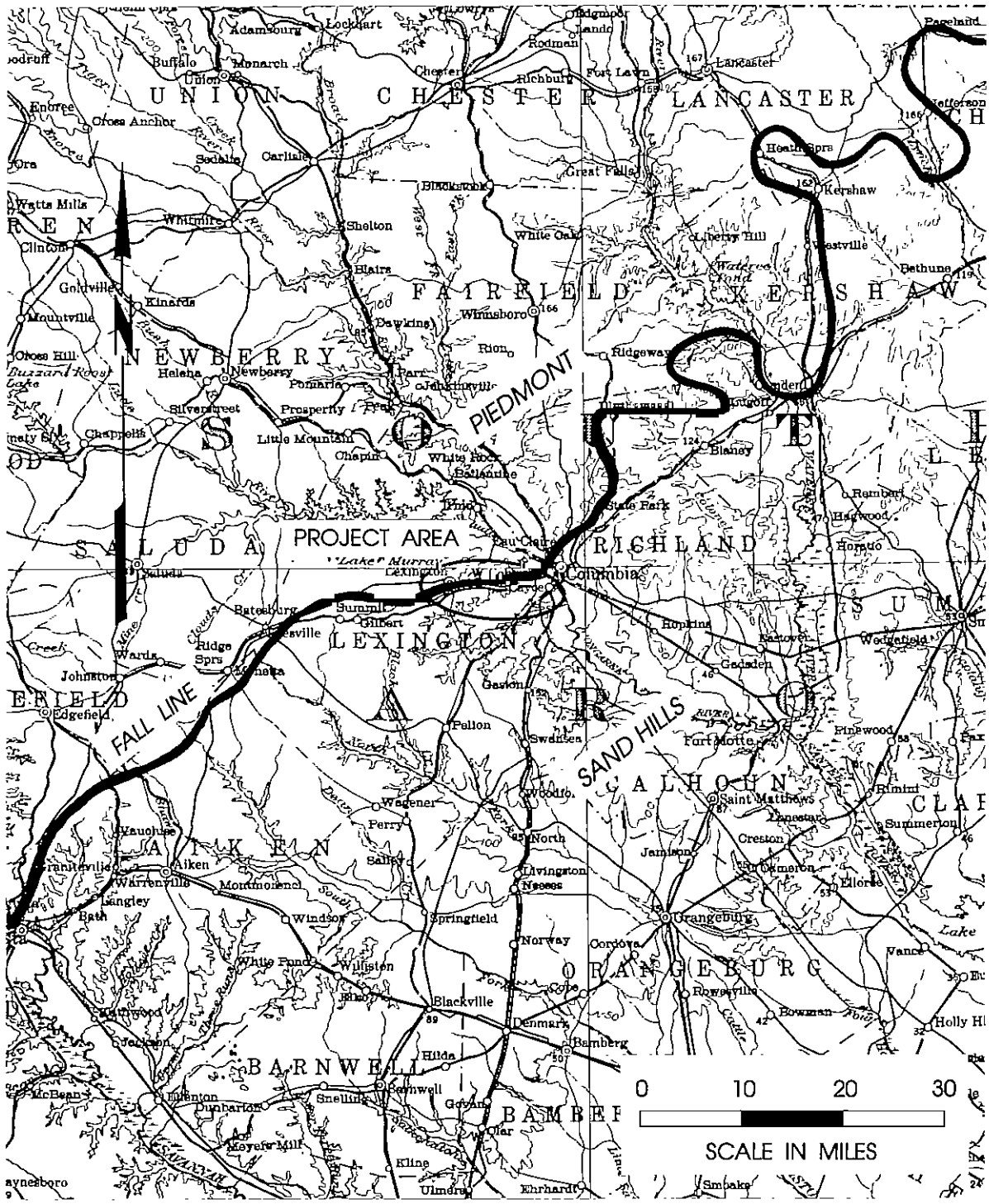


Figure 1. Survey area in central South Carolina.

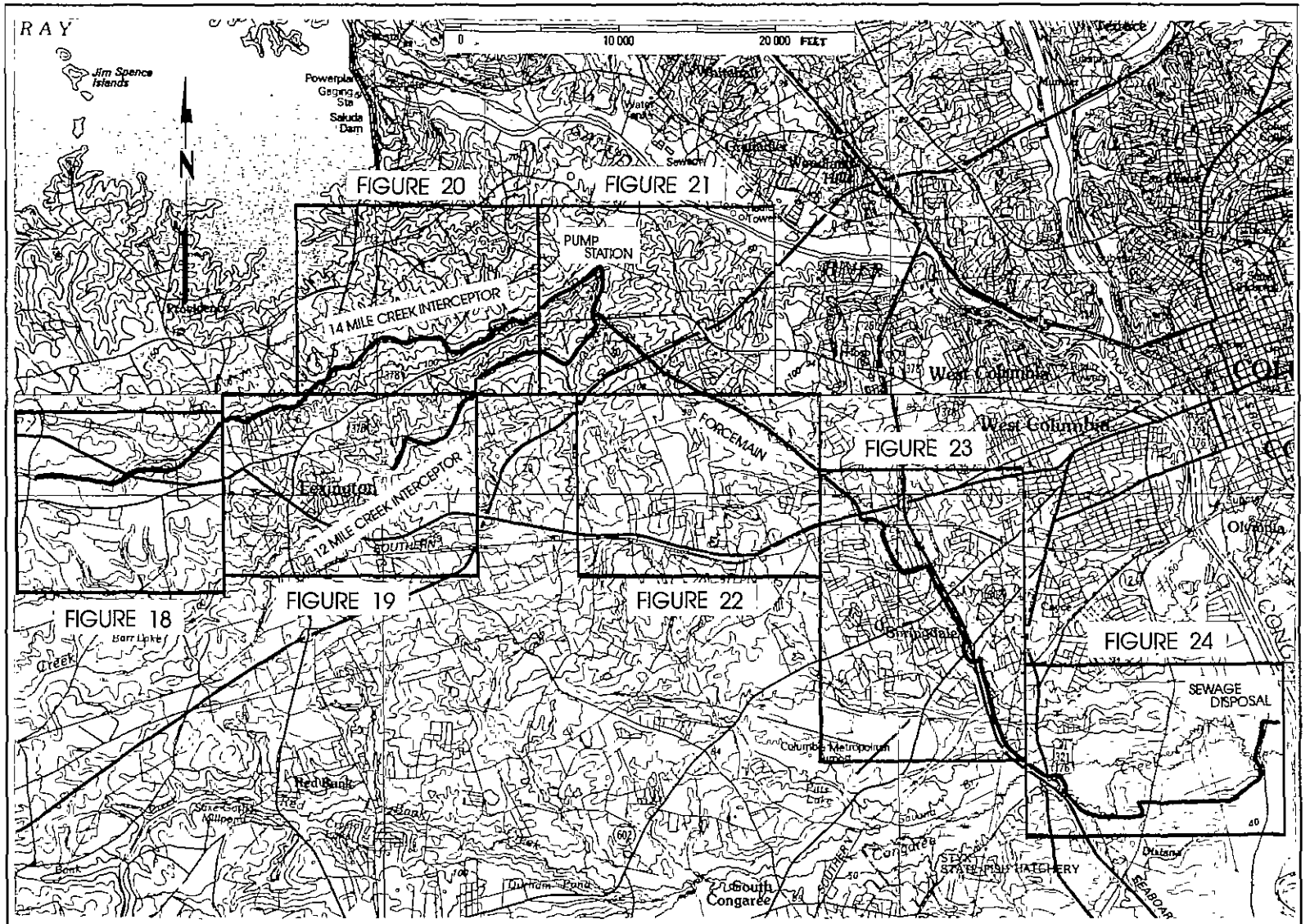


Figure 2. Approximate locations of the Fourteenmile Creek Interceptor, the Twelvemile Creek Interceptor, and the Force Main. Also shown are the areas covered by detailed maps.

Figure 3. West end of the Fourteenmile Creek corridor, south of US 378. Here the creek is about 5 feet in width.

Figure 4. Fourteenmile Creek corridor, east of Cherokee Road, showing the low ground.

the transmission line as its corridor for about 1100 feet. At the intersection of the transmission line and S. Woodside Parkway it follows the road to its intersection with Wilton Road. Along S. Woodside the force main will be situated about a foot off the edge of the pavement, within the road right-of-way (Figure 8). At the intersection of S. Woodside and Wilton Road, the sewer line will be placed on the south side Wilton Road, again only a foot off the pavement. At the intersection of Wilton Road and Crest Drive, the corridor turns to the southeast, following the west side of the road, crossing under Platt Springs Road. It follows the edge of the I-26 right-of-way to Terrytown Road, where it is situated on the west side. At the SC 302 and I-26 interchange the corridors shifts over to the east or north side of I-26 where it parallels the interstate to the US 176/321/21 interchange (Figure 9). It then follows Dixiana Road to Saxe Gotha Drive where it is found within a few feet of the road's northern edge. Where Saxe Gotha Road dead ends at the yet to the completed Twelfth Street Extension, the force main crosses over to follow a dirt farm road (Figure 10) for 0.6 mile to Old State Road (S-66). It will cross the Congaree Creek on the west side of the bridge (Figure 11) and then continue to the Cayce Waste Treatment Plant, following the centerline of the Old State Road (Figure 12). As a consequence, a very large portion of this 12.5 mile project follows existing corridors and areas of very heavy disturbance.

This study is intended to provide a detailed explanation of the archaeological survey of the right of way and the findings. The statewide archaeological site files held by the South Carolina Institute of Archaeology and Anthropology were examined for information pertinent to the project area. In addition, the South Carolina Department of Archives & History was consulted about National Register properties in the area, as well as previous historical studies. No National Register properties were found to be located in or around the project area (Dr. Tracy Powers, personal communication, June 7, 1996).

No archaeological sites were found in the Fourteenmile Creek corridor, probably because of the small size of the drainage and the interceptor's placement on the lowest bottoms immediately adjacent to the creek. There were no areas suitable for prehistoric or historic occupation and the creek itself seems too small and sluggish to support many specialized historic sites such as mills.

There were a number of archaeological sites recorded for the Twelvemile Creek corridor, although most were situated beyond the 50 foot mark from the creek. The greater number of archaeological sites along Twelvemile Creek is probably the result of wider bottoms, better drained soils, and the creek's larger rank or size. Only three archaeological sites, all previously recorded, were found in this corridor. Site 38LX176 is a historic mill site, although little evidence of any mill works were found in the original study. The current study found evidence of only a roadway. We recommend a series of steps which can be taken to minimize the effect of the project on this site. Site 38LX151 is a prehistoric site situated in the creek bottom. Materials, primarily quartz flakes, were recovered immediately up to the creek bank, which in this area is eroding into the site area. Site 38LX187 is another historic mill site evidenced by remnant timbers and the drive shaft for the mill. Historic materials are exceedingly rare in the shovel tests, although the historic sources suggest that this was a sizeable, and important, complex. Both of these sites are recommended potentially eligible for inclusion on the National Register of Historic Places and require Phase II testing if the corridor cannot be redesigned to avoid this area.

The northern two-thirds of the force main project follows previously disturbed corridors through dissected Piedmont topography. Only one site was previously recorded for this area, 38LX150. It is recommended as not eligible for inclusion on the National Register and no additional archaeological work is recommended. no new archaeological sites were encountered. The southern and eastern third of the project crosses the Congaree floodplain, an area of extensive (and intensive) archaeological survey and investigation. While the area is dotted with archaeological sites, many of which have been destroyed by highway construction, the proposed sewer line crosses only one of these previously recorded sites — 38LX83. Throughout the boundaries of this site, except for

Figure 5. View of the Twelvemile Creek corridor showing the heavy vegetation.

Figure 6. Twelvemile Creek corridor, showing the creek and bank area at 38LX187.

about 120 feet where the line crosses Congaree Creek itself, the force main will be placed within the roadway of Old State Road and should not therefore have an affect on the site.

Curation

Archaeological site forms have been filed with the South Carolina Institute of Archaeology and Anthropology (SCIAA). The field notes, artifact catalogs, and artifacts resulting from these investigations have been curated at SCIAA using their accessioning and cataloging system. All records and duplicate copies have been provided to SCIAA and will be maintained by that institution in perpetuity. The only photographic materials associated with this project are color prints, which are not archival. The negatives and prints for these photographs are retained by Chicora Foundation.

Natural Setting

The project area is located in Lexington County, which is situated in central South Carolina. Lexington is bounded to the north by Newberry County, to the east by Richland and Calhoun counties, to the south by Orangeburg County, and to the west by Aiken and Saluda counties.

The Saluda and Congaree rivers drain the eastern portion of the county, and the north fork of the Edisto River drains the western portion. Numerous smaller streams (such as both Twelvemile and Fourteenmile Creeks) are found throughout the county and generally flow either northward into the Saluda or eastward into the Congaree.

Both the county and the project area lay in two physiographic provinces: the Piedmont Plateau to the northwest of the "fall line" and the Sandhills to the southeast (Figure 1). In the vicinity of the Fall Line, dividing the Piedmont and Coastal Plain, major physiographic and geologic subdivisions occur which likely influenced human occupation. On major drainages, such as the Congaree River, the occurrence of rapids could interfere with water travel and the location of early historic occupation on the Fall Line reflects this concern (Jones 1971; Mills 1972 [1826]:157). The Fall Line also strongly influenced prehistoric occupation since its location between two major ecotones could allow exploitation of a greater diversity of resources.

The southern half of project corridors falls within the Sandhills region. The geology of the Sandhills is characterized by unconsolidated marine-deposited sediments and the project area is characterized by Blaney, Brogdon, Johnston, and Lakeland soils (Lawrence 1976). Blaney sands are well drained and are normally found on toe slopes in the Sandhills region. Brogdon loamy sands are well drained and form in loamy sediment on stream terraces. Johnston mucky loams are very poorly drained soils that formed in stratified marine and fluvial deposits. Lakeland sands are excessively drained soils which formed in deep beds of marine sands (Lawrence 1976).

Relief is gently rolling and slopes in the 2 to 15% range are common. Like the Piedmont, there are a number of small streams which dissect the Sandhills and their floodplains are generally narrow. Elevations may range from about 200 feet along the streams to upwards of 400 feet in the broad plains and rolling hills.

Vegetation in the Sandhills region is characterized by two major forest types: the longleaf and loblolly pine communities (Frothingham and Nelson 1944:19-21). These communities consist primarily of pine with several species of hardwoods including gum and oak (Braun 1950: 285-286). Currently, the vegetation in the surrounding area consists of mixed pine/hardwood with a light to moderate understory of vegetation. In 1826 Robert Mills stated that the quality of lumber in the district was excellent:

> It is no uncommon thing to find trees of this description girthing six or seven feet. Besides the poplar, walnut, maple, and various species of the oak, there re the mock-orange, evergreen, elm, hickory, ash, gum, &c. Of the fruit trees there are, the peach, plum, cherry, pear, quince, and apple; besides the native

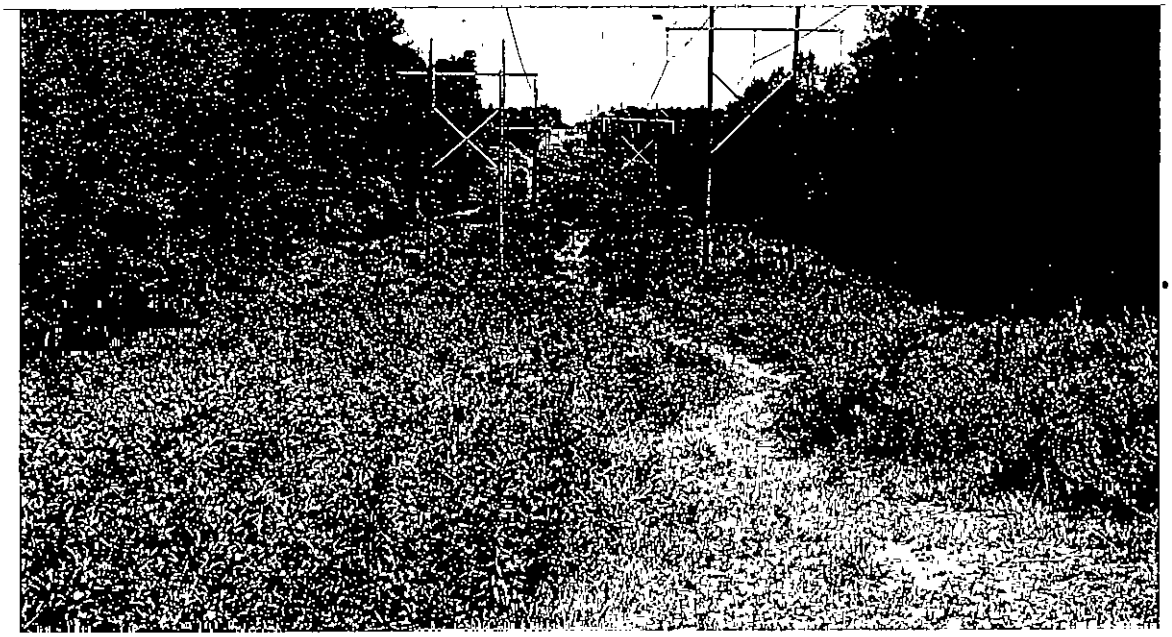


Figure 7. View of Force Main corridor along the SCE&G transmission line north of I-20.

Figure 8. Force Main corridor along S. Woodside Parkway.

grapes, and various nuts and melons (Mills 1972 [1826]:617).

The northern half of the project, incorporating most of the Twelvemile and Fourteenmile drainage, is situated just within the Piedmont, in an area characterized by theGeorgeville-Nason soil association. The topography is gently sloping to strongly sloping and elevations range from just under 300 feet above mean sea level (AMSL) to almost 400 feet AMSL.

Streams and drainages are numerous in the Piedmont, cutting into the underlying rock to form what is called a dendritic pattern. The main divides are fairly broad ridgetops that have easily eroded surface soils overlying primarily shales, schists, quartz, microline gneiss, and argillite. The stream floodplains, such as those being studied here, are narrow and may even be lacking (a situation seen in several locations along both Twelvemile and Fourteenmile creeks).

The Piedmont vegetation is typically an oak-hickory forest, although today pine dominates as a sub-climax forest. Loblolly pine is most common, although a variety of planted trees are commonly present.

The most common vegetation type in the project area, however, is not the oak-hickory forest of either the Sandhills or Piedmont, but a forest characteristic of the narrow floodplains, dominated by hickories, winged elm, sycamore, and sweetgum. Boxelder maple and hackberry are principal understory species. Immediately adjacent to the creek, such as in the area of the survey corridor, there is often very dense ground cover, aided in its development by the opening in the canopy over the creek. Vines included greenbrier, trumpet vine, Virginia creeper, and poison ivy. Many areas had also been invaded by dense stands of briers.

This vegetation was particularly troublesome during the survey. The corridors were apparently flagged about a year ago and had largely grown back over by the time of the survey. Often the corridors were identified only by virtue of finding an occasional old cut, now covered with new growth.

The soils vary greatly depending on the precise location. Very poorly to poorly soils, such as Lumbee, Johnston, and Lynn Haven dominate the Fourteenmile Creek Interceptor. These soils typically have a black sand or loamy sand A horizon overlying gray sands and are formed in marine sediments. All have seasonal high water tables within the upper foot of the surface (Lawrence 1976). At the northeastern end Lawrence reports areas of well-drained Congaree silt loams, which indeed are present in the upper terrace overlooking the creek. These soils have an A or Ap horizon of dark-brown silt loams overlying a yellowish-brown silt loam or clay. Within 25 to 30 feet of the creek, however, less well drained soils are common.

A similar range of soils is found along the Twelvemile Creek Interceptor. Poorly drained soils such as Chenneby and Enoree dominate the corridor. The Chenneby soils have an A horizon of dark brown silty clay overlying a reddish-brown silt loam or clay. The Enoree soils, in contrast, exhibit a profile of brown silt loam over a brownish-yellow sandy loam. The Enoree soils have a seasonal water table within the upper foot of the surface, while the Chenneby soils will have a water table within the upper two to three feet. Again, a few areas of well drained Congaree soils, especially in the middle third of the corridor, are found.

The force main exhibits a wide variety of soils, typical of its length and the numerous different physiographic areas it crosses. Present are well drained soils such as Congaree, Craven, Dothan, Fuquay, Georgeville, Goldsboro, Lakeland, and Pelion, as well as a few poorly drained areas characterized by Johnston, Lumbee, and Wahee soils. This corridor, however, generally follows areas of heavy disturbance, so the soil characteristics tend to be less important to survey methodology than they are for the two other corridors.

During the South Carolina Erosion Survey, the portion of the project area within the Piedmont exhibited moderate sheet erosion with occasional gullies (Lowry 1934). The Sandhills, while exhibiting some steep slopes were not as severely damaged.

Figure 9. Force Main corridor along I-26 crossing a large borrow pit overlooking Sixmile Creek.

Figure 10. Force Main corridor along the centerline of the farm road from Saxe Gotha Road to Old State Road.

The climate is temperate and is usually characterized by mild winters and warm summers. Rainfall measures from 46 to 48 inches a year. The annual distribution indicates that July is the wettest month with October and November are the driest. Summers are warm and long with temperatures reaching 90° or higher on an average of 49 days, and they reach 100° or more two or three days a year. Portions of this survey were conducted during such a heat wave, when the heat index hovered between 101 and 110°. Winters are mild and temperatures are as low as 32 degrees on 60% of the days. In 1826 Mills describes the climate as:

> mild and salubrious, except immediately bordering on the water-courses; what few diseases prevail are mostly confined to the bilious remittent fevers (Mills 1972 [1826]:621).

Figure 11. Force Main corridor crossing Congaree Creek. This view is from the west side of the bridge looking south.

Figure 10. Force Main corridor along the centerline of Old State Road, south of the Cayce Waste Treatment Plant.

PREHISTORIC AND HISTORIC OVERVIEW

Previous Archaeological Investigations

Previous archaeological investigations in Lexington County include studies by Anderson (1974, 1974b, 1979), Anderson et al. (1974), Drucker (1977), Goodyear (1975), Harmon (1980), Michie (1970; 1971), Trinkley (1974, 1980) and Wogaman et al. (1976). The vast majority of these studies are associated with surveys of the Twelfth Street extension project or the Southeastern Beltway, although a number of sewer surveys have also been conducted. Others have focussed on testing or excavation at sites such as the Manning site and the Thom's Creek site. Michie's work identifying Fort Congaree stands as a major research contribution for the area (Michie 1989). In addition, a number of smaller highway department surveys (a number of which are referenced in Derting et al. 211:309-310, 315,317-319), transmission line right of way surveys (see, for example Adams 1994a and 1994b) and small parcel surveys (for example, Adams and Trinkley 1991) have been performed in the area.

One of the most useful studies is that by Drucker (1977), who examined a 100-foot wide corridor on the north side of Twelvemile Creek, encompassing the current survey limits. This initial survey, conducted in the spring of 1977 relied primarily on the examination of cleared or open ground, although shovel testing was used in some areas. The survey identified 41 archaeological sites, five of which are within the general area of this study (from southwest to northeast these are 38LX153, 38LX176, 38LX151, 38LX187, and 38LX155).

During an archaeological survey of the Southeastern Beltway, Anderson et al. (1974) found that prehistoric sites occurring near the confluence of Congaree Creek (in the vicinity of the Force Main project area) and the Congaree River occurred on slightly elevated dry knolls or ridges within broad, flat, low-lying fields which overlook swamps (Anderson et al. 1974:4-5). Wogaman and his colleagues, based on additional highway survey in this same area, suggest that most sites will be found in the floodplain terraces and upland terraces associated with the floodplains, with relatively few sites being found in the Sandhills (Wogaman et al. 1976). Drucker's work on Twelvemile Creek found that while Early Archaic sites were found on the terraces adjacent to the creek, Middle and Late Archaic sites were not only found on the terraces, but also on the adjacent side slopes. Woodland occupation was found on alluvial terraces (Drucker 1977:48-50).

Very little historical archaeology has been performed in the Sandhills region of the state. However, work by Brooks and Crass (1991) at the Savannah River site provide some guidance to potential locations for historic sites in the region. During the colonial period, settlement was concentrated along major water courses on well drained elevated soils. However, during the late eighteenth century settlement had progressed up larger creeks. This pattern continued up through the mid-nineteenth century. During the postbellum and modern periods, settlement had shifted away from water-courses and became more road oriented.

Since much of the right-of-way is located in the low bottoms, immediately adjacent to either Fourteenmile or Twelvemile creek, the potential for prehistoric remains was believed to be low. These areas are low, poorly drained, exhibit little level ground, have high seasonal water tables, and are frequently flooded. The combination of limited space for occupation, coupled with generally unfavorable conditions likely accounts for the low use of these areas. In addition, the frequent flooding is likely to have scoured many areas, limiting the deposition necessary to preserve sites.

The Force Main corridor, in contrast, was largely situated in an area of extensive previous

disturbance — along the edge of a transmission line which had been cleared and grubbed, along the edge of roads which had been damaged by construction and which frequently exhibited fill sections, along the edge of an interstate highway where sections of greatest potential for archaeological recovery had been used as borrow pits, and along the centerlines of roadways with very long histories of use which probably severely damaged or destroyed any archaeological remains which might be present. Consequently, even along the Force Main project the potential for archaeological sites was thought to be minimal.

An examination of the site files housed by the South Carolina Institute of Archaeology and Anthropology revealed five sites previously identified by Drucker in the vicinity of the Fourteenmile Creek corridor (38LX153, 38LX176, 38LX151, 38LX187, and 38LX155), as well as one site within the Force Main corridor (38LX150). In addition, a number of sites were found in the Congaree floodplain, although only one, 38LX83, was actually within the project corridor.

We were informed that the South Carolina Department of Archives and History identified no National Register sites the project corridor, with the nearest ones being listed as the Manning Archaeological Site, the Congarees Site, and the Sam Site (Tracy Power, personal communication 1996). No architectural sites in the area are recorded by the South Carolina Department of Archives and History, although Lexington County has not conducted an architectural survey so information on the county is meager.

Brief Prehistoric Synopsis

Overviews for South Carolina's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared. There are, in addition, some "classic" sources well worth attention, such as Joffre Coe's *Formative Cultures* (Coe 1964), as well as some new general overviews (such as Anderson 1994 and Sassaman 1993). Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Sassaman and Anderson (1994) for the Middle and Late Archaic. Only a few of the many sources are included in this study, but they should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the project area. For those desiring a more general synthesis, perhaps the most readable and well balanced is that offered by Judith Bense (1994), *Archaeology of the Southeastern United States: Paleoindian to World War I.* Figure 13 offers a generalized view of South Carolina's cultural periods.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., is evidenced by basally thinned, side-notch projectile points; fluted, lanceolate projectile points, side scrapers, end scrapers; and drills (Coe 1964; Michie 1977; Williams 1968). Oliver (1981, 1985) has proposed to extend the Paleoindian dating in the North Carolina Piedmont to perhaps as early as 14,000 B.P., incorporating the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, as representatives of the terminal phase. This view, verbally suggested by Coe for a number of years, has considerable technological appeal.[1] Oliver suggests a continuity from the Hardaway Blade through the Hardaway-Dalton to the Hardaway Side-Notched, eventually to the Palmer Side-Notched (Oliver 1985:199-200). While convincingly argued, this approach is not universally accepted.

The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along

[1] While never discussed by Coe at length, he did observe that many of the Hardaway points, especially from the lowest contexts, had facial fluting or thinning which, "in cases where the side-notches or basal portions were missing, . . . could be mistaken for fluted points of the Paleo-Indian period" (Coe 1964:64). While not an especially strong statement, it does reveal the formation of the concept. Further insight is offered by Ward's (1983:63) all too brief comments on the more recent investigations at the Hardaway site (see also Daniel 1992).

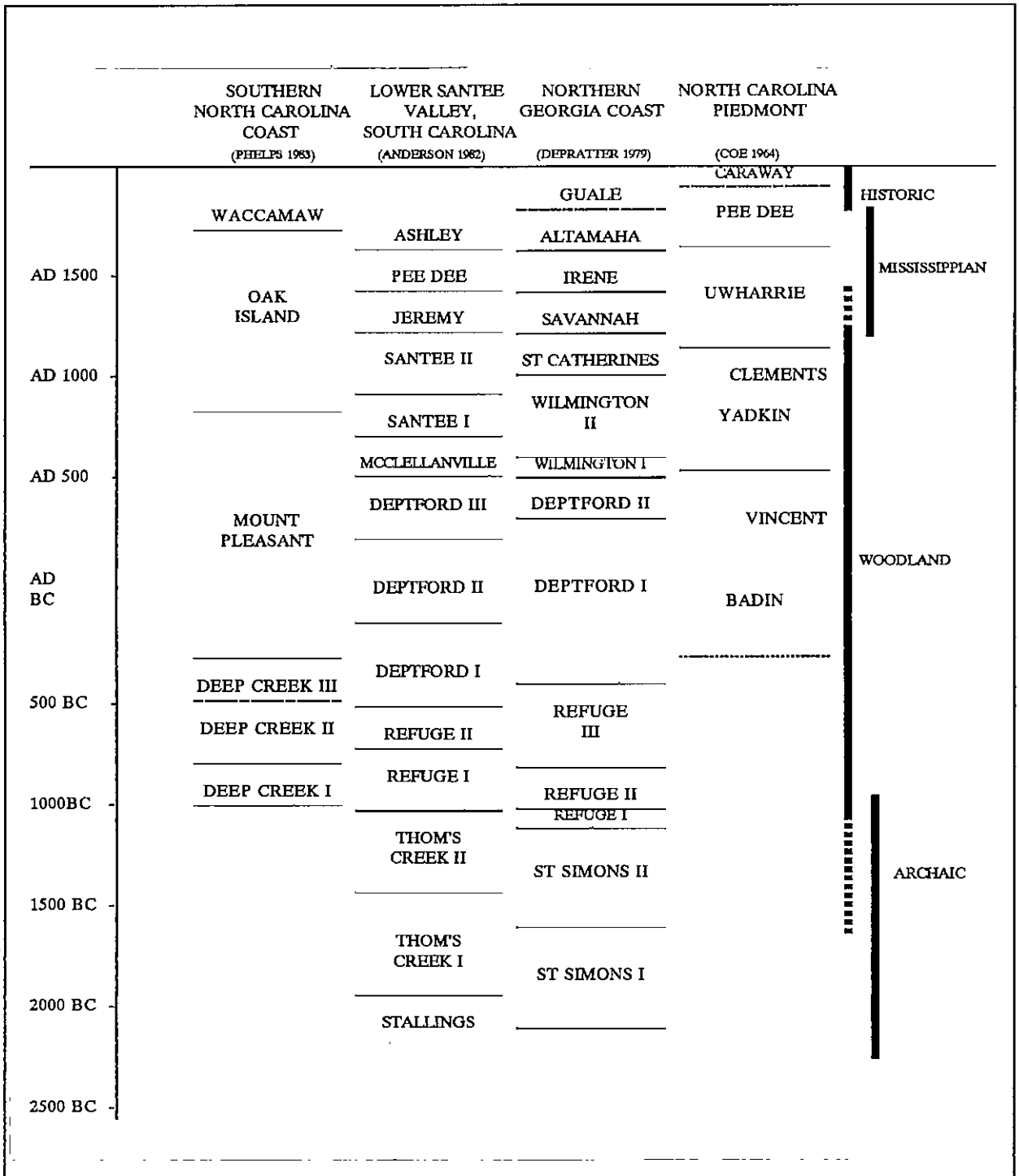


Figure 13. A generalized cultural sequence for the South Carolina Woodland Period.

major river drainages, which Michie interprets to support the concept of an economy "oriented toward the exploitation of now extinct mega-fauna" (Michie 1977:124). The distribution of Paleoindian tools offered by Anderson (1992:Figure 5.1) reveals a rather general, and widespread, occurrence throughout the region. Phelps (1983:21) states that settlement patterning in the Coastal Plain is impossible to meaningfully discuss since there have been so few recorded sites, but speculates on the presence of base camps along major streams, with special activity sites in the uplands. An alternative is the model tracking the replacement of a high technology forager (or HTF) adaptation by a "progressively more generalized band/microband foraging adaption" accompanied by increasingly distinct regional traditions (perhaps reflecting movement either along or perhaps even between river drainages) (Anderson 1992b:46).

Distinctive projectile points include lanceolates such as Clovis, Dalton, perhaps the Hardaway, and Big Sandy (Coe 1964; Phelps 1983; Oliver 1985). A temporal sequence of Paleoindian projectile points was proposed by Williams (1965:24-51), but according to Phelps (1983:18) there is little stratigraphic or chronometric evidence for it. While this is certainly true, a number of authors, such as Anderson (1992a) and Oliver (1985) have assembled impressive data sets. We are inclined to believe that while often not conclusively proven by stratigraphic excavations (and such proof may be an unreasonable expectation), there is a large body of circumstantial evidence. The weight of this evidence tends to provide considerable support.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992b for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society (see Service 1966), were nomadic, and were both hunters and foragers. While population density, based on isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.[2], does not form a sharp break with the Paleoindian Period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially attractive ecotones.

Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer points may be included with either the Paleoindian or Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational

[2] The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether ceramics, such as the fiber-tempered Stallings ware, will be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery." While this issue has been of considerable importance along the Carolina and Georgia coasts, it has never affected the Piedmont, which seems to have embraced pottery far later, well into the conventional Woodland period. The importance of the issue in the Sandhills, unfortunately, is not well known.

changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies.

Settlements during the Early Archaic suggest the presence of a few very large, and apparently intensively occupied, sites which can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts — these are the "network of tracks" mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials which has suggested to many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites are thought of as special purpose or foraging sites (see Ward 1983:67).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Stanly and Halifax projectile points. Phelps (1983:25) notes that the gradual increase from Paleoindian to Archaic in the Coastal Plain seems to peak during the Middle Archaic Morrow Mountain phase.

Much of our best information on the Middle Archaic comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrappers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to more commonly occur and storage pits are identified. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

The available information has resulted in a variety of competing settlement models. Some argue for increased sedentism and a reduction of mobility (see Goodyear et al. 1979:111). Ward argues that the most appropriate model is one which includes relatively stable and sedentary hunters and gatherers "primarily adapted to the varied and rich resource base offered by the major alluvial valleys" (Ward 1983:69). While he recognizes the presence of "inter-riverine" sites, he discounts explanations which focus on seasonal rounds, suggesting "alternative explanations . . . [including] a wide range of adaptive responses." Most importantly, he notes that:

> the seasonal transhumance model and the sedentary model are opposite ends of a continuum, and in all likelihood variations on these two themes probably existed in different regions at different times throughout the Archaic period (Ward 1983:69).

Others suggest increased mobility during the Archaic (see Cable 1982), Sassaman (1983) has suggested that the Morrow Mountain phase people had a great deal of residential mobility, based on the variety of environmental zones they are found in and the lack of site diversity. The high level of mobility, coupled with the rapid replacement of these points, may help explain the seemingly large numbers of sites with Middle Archaic assemblages. Curiously, the later Guilford phase sites are not as widely distributed, perhaps suggesting that only certain micro-environments were used (Braley 1990; cf. Ward [1983:68-69] who would likely reject the notion that substantially different environmental zones are, in fact, represented).

Recently Abbott et al. argue for a combination of these models, noting that the almost certain increase in population levels probably resulted in a contraction of local territories. With small territories there would have been significantly greater pressure to successfully exploit the limited resources by more frequent movement of camps. They discount the idea that these territories could have been exploited from a single base camp without horticultural technology.

Abbott and his colleagues conclude, "increased residential mobility under such conditions may in fact represent a common stage in the development of sedentism" (Abbott et al. 1995:9).

From excavations at a Sandhills site in Chesterfield County, South Carolina Gunn and his colleague (Gunn and Wilson 1993) offer an alternative model for Middle Archaic settlement. He accepts that the uplands were desiccated from global warming, but rather than limiting occupation, this environmental change made the area more attractive for residential base camps. Gunn and Wilson suggest that the open, or fringe, habitat of the upland margins would have been attractive to a wide variety of plant and animal species.

Another point of some controversy is the idea that the groups responsible for the Middle Archaic Morrow Mountain and Guilford points were intrusive ("without any background" in Coe's words) into the North Carolina Piedmont, from the west, and were contemporaneous with the groups producing Stanly points (Coe 1964:122-123; Phelps 1983:23). Phelps, building on Coe, refers to the Morrow Mountain and Guilford as the "Western Intrusive horizon." Sassaman (1995) has recently proposed a scenario for the Morrow Mountain groups which would support this west-to-east time-transgressive process. Abbott and his colleagues, perhaps unaware of Sassaman's data, dismiss the concept, commenting that the shear distribution and number of these points "makes this position wholly untenable" (Abbott et al. 1995:9).

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). These people continued to intensively exploit the uplands much like earlier Archaic groups.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type and a small variant from Gaston (South 1959:153-157), developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery.

This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Coe 1964:112-113; Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44).

Although fiber-tempered pottery has been known from South Carolina since at least the late 1950s, it remains relatively uncommon in the interior reaches of the state. Where found, the pottery is typically associated with Savannah River Stemmed points, steatite pottery or disks, and grooved axes.

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine which reduced the oak-hickory nut masts which previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly

complex socio-economic system.

Woodland Period

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings and Thoms Creek series. These sand tempered Thoms Creek wares are decorated using punctations; jab-and-drag, and incised designs (Trinkley 1976). Also potentially included are Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (Waring 1968). Others would have the Woodland beginning about 3,000 B.P. and perhaps as late as 2,500 B.P. with the introduction of pottery which is cord-marked or fabric-impressed and suggestive of influences from northern cultures.

Early Woodland sites in the Sandhills seem to be dominated by small collections of the Late Archaic or Early Woodland Thom's Creek pottery, although its popularity has never been subjected to the careful scrutiny of multiple radiometric dates. Little is known about possible cultural associations, although there is some limited evidence that at least some of the small variants of the Savannah River Stemmed may be found with Early Woodland materials. The large triangular Roanoke point (South 1959:146-148) is likely also associated with Early Woodland ceramics.

In spite of our near total ignorance of Early Woodland sites, many suggest that the subsistence economy was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish. This is based on the continuation of a generalized Late Archaic pattern, which may or may not be appropriate.

Further to the west, in the Piedmont, the Early Woodland is marked by a pottery type defined by Coe (1964:27-29) as Badin.[3] This pottery is identified as having very fine sand in the paste with an occasional pebble. Coe identified cord-marked, fabric-marked, net-impressed, and plain surface finishes. Beyond this pottery little more is known about the makers of the Badin pottery as is known about those who made New River wares.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,300 B.P. to 1,200 B.P. The Middle Woodland is best understood in the context of Deptford, which has been carefully described by DePratter (1979:118-119, 123-127), who suggests two divisions with check stamping and cord marking gradually being supplemented by complicated stamping. The introduction of clay or grog tempered Wilmington wares follows on the heels of the Deptford phase.

We do not, however, mean to imply that the origin of the Middle Woodland is well understood. In fact, Sassaman takes some pains to emphasize that the transition from Refuge to Deptford is not well understood:

> the Refuge-Deptford problem is the result of numerous regional processes that converge in the Savannah River region between 3000 and 2000 B.P. The sociopolitical entities that existed on the coast and in the interior during the fourth millennium dissolved after about 2400 B.P., resulting in the dispersal of small populations across the region. . . . Pottery designs changed from highly individualistic punctation and incision to the (seemingly) anonymous use of dowels for

[3] The ceramics suggest clear regional differences during the Woodland which seem to only be magnified during the later phases. Ward (1983:71), for example, notes that there "marked distinctions" between the pottery from the Buggs Island and Gaston Reservoirs and that from the south-central Piedmont.

> stamping. . . . the use of a carved paddle for simple stamping should mark the "blending" of Refuge and Deptford culture, or, more accurately, reflect the subsumption of Refuge culture by the expanding Deptford complex.
>
> To complicate matters, the tradition of cord-wrapped paddles makes its way into the South Carolina area sometime after 2500 B.P. (Sassaman 1993:118-119).

The work by Milanich (1971) and Smith (1972), coupled with the considerable additional site-specific research (see, for example, DePratter 1991; Sassaman 1993:110-125; Thomas and Larsen 1979) provides an exceptional background for this particular phase. Milanich's (1971) interpretation of a coastal-estuarine settlement model with interior occupation limited to short-term extractive activities, while still useful, has been modified through the discovery of a number of interior base camps. In fact, there seems to be evidence for a number of interior seasonal or perhaps even permanent base camps, although there is as yet no convincing evidence of horticulture. Thomas et al. (1995:111) suggest that there have been few efforts "to enhance or refine Milanich's interpretations of settlement patterns." This, of course, is not strictly correct and Anderson (1985:48) provides a brief overview of some very significant concerns. He notes that Milanich's interpretation that the interior river valleys were used by small, residentially mobile foraging groups which dispersed from large coastal villages is clearly not correct. In fact, just the opposite appears more likely, with coastal use and settlement being seasonal (Anderson 1985:48-49).

Moving to the Piedmont the dominant Middle Woodland ceramic type is typically identified as the Yadkin series (which is also frequently identified at Sandhill sites in North and South Carolina). Characterized by a crushed quartz temper the pottery includes surface treatments of cord-marked, fabric-marked, and a very few linear check-stamped sherds (Coe 1964:30-32). It is regrettable that several of the seemingly "best" Yadkin sites, such as the Trestle site (31An19) explored by Peter Cooper (Ward 1983:72-73), have never been published.

It seems that South Carolina, just like Georgia and North Carolina, is struggling to comprehend, and deal with, a broad array of Middle Woodland cord marked pottery.

Although Deptford and Yadkin pottery are usually well recognized, the associated lithic technology is not. From a broad range of sites and contexts come "medium-sized triangular" points, Yadkin-like triangular points, and even a range of small triangular points.

The Middle Woodland cannot be fully appreciated without reference to Hopewellian influences, whether the presence of coastal sand burial mounds and their evidence of status differences (e.g., Thomas and Larsen 1979) or the presence of occasional exchange goods. Sassaman et al. note that while there is a lack of "obvious" Hopewellian influence in the Savannah area, there is nevertheless evidence of a "higher order of sociopolitical complexity" (Sassaman et al. 1990:14). They note that the broad similarities in ceramic design evidence the movement of ideas, or "interprovincial integration," not seen in the Early Woodland. The presence of coastal shells found at interior sites demonstrates the movement of goods.

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

Along the coast the St. Catherines pottery is viewed by many archaeologists as an important aspect in the gradual progression from Deptford to Savannah wares. Perhaps the most succinct summary of the Georgia Late Woodland St. Catherines phase is that offered by DePratter and Howard (1980:16-17). Significantly, they note that most of the Georgia data comes from burial mound excavations, "because only limited village [and presumably shell midden] excavations have been conducted" (DePratter and Howard 1980:16). Even with burials there is a limited range of artifact types — shell beads, worked whelk shell bowls or drinking cups, bone pins, and triangular projectile points. Not only is little known about village life, nothing is known concerning residential structures and there is no good evidence of agricultural crops. Once again, the Late Woodland is presented as little more than an extension of the previous Middle Woodland lifeways.

Moving inland from the coast our understanding of the Late Woodland is uneven, giving the impression that broad expanses of the Inner Coastal Plain and perhaps even the Sandhills were largely ignored by prehistoric people. Sites, where found, appears to focus on edge areas, such as the terraces overlooking swamps or the sandy ground around Carolina bays.

Moving into the Piedmont the Late Woodland is typically associated with small triangular points such as Uwharrie, Caraway, Pee Dee, and Clarksville (Coe n.d., 1964;49; Oliver 1985; South 1959:144-146). The characteristic pottery is the Uwharrie series which contains crushed quartz (one characteristic of which is its tendency to protrude through the wall of the pottery). This series included cord-marked and net-impressed surface treatments. The ware was described by Coe in the unpublished Poole site report (Coe n.d.).[4] This pottery appears to represent an evolution from the earlier Yadkin wares (Coe 1995:156). Of equal interest is a radiocarbon date of A.D. 1610, suggesting that this pottery lasted well into the protohistoric.

South Appalachian Mississippian

In neighboring North Carolina the Mississippian is typically identified with the Pee Dee culture, defined through the excavations of Joffre Coe at Town Creek site in central North Carolina (Coe 1995; Reid 1967). The site, generally accepted to represent a northern intrusion of a Mississippian chiefdom, was originally dated from about A.D. 1550 to 1750, although more recent analyses suggests a date more likely between A.D. 900 and 1400 (Coe 1995:159).

In Georgia the Mississippian, at its simplest, is seen as the Savannah Phase, consisting of three subphases, followed by the Irene, broken into two subphases. This follows a simple coastal chronology based almost entirely on the results of excavations at Irene (Caldwell and McCann 1941) and the resulting synthesis by DePratter (1979:Table 30; 1991:183-193).

Anderson's (1994) research, combined with the overview edited by Williams and Shapiro (1990), reveals that these simplified views likely obscure a tremendous amount of variation. In central South Carolina researchers such as DePratter, based on research at the Camden, South Carolina mounds, have suggested a series of phases termed Belmont Neck, Adamson, Town Creek, McDowell, Mulberry, and Daniels (Williams and Shapiro 1990:56-58).

Brief Historic Synopsis

General accounts of Lexington County history are presented by Anderson (1975), Gay (1974), Goodyear (1976), Meriwether (1940), Michie (1989), and Trinkley (1974).

Lexington County was first occupied by Europeans who built a fortified military garrison (Fort Congaree) in 1718 on the site of an a former Congaree Indian village. A second fortification was established 2½ miles north after attacks by

[4] This study was intended to be published under a monograph series entitled, *University of North Carolina Laboratory of American Archaeology Publications*, but was never completed. The work was conducted in 1936, although the ensuing report is undated.

Iroquois from the Ohio Valley upon settlers in the late 1740s. These two forts were significant in the defense of the Carolina Back Country (Central Midlands Regional Planning Council 1974:132).

The first large trading post in central South Carolina was built near the old Congaree fort site in 1733. This post was an exchange center between Charles Town and the western settlements. During this year the area received political identity as Congaree District. Two years later it was renamed Saxe Gotha in an attempt to bring immigrants from Germany and Switzerland to the piedmont. Most of these early settlers were small farmers while the more prosperous ones operated stores, trading posts, saw and grist mills.

When the wagon road between the town and Augusta was opened in 1754, river traffic increased. A ferry operation began over the Congaree, and the village moved towards the ferry site where Granby Village was established sometime before 1774. As the head of navigation on the Congaree River, Granby became an important commercial center. Indigo, cotton, manufactured ropes, Indian corn, beeswax, and other goods from Saxe Gotha and the up country were transported to Charles Town where they were exchanged for salt, fabrics and other merchandise needed in the interior (Central Midlands Regional Planning Council 1974:134). Mouzon's Map of 1775 locates Saxe Gotha Township within the Orangeburg Precinct. While it shows the "Old Fort," and Twelve Mile Creek (Figure 14), it otherwise reveals that even this late, the Lexington area was a sparsely settled frontier,

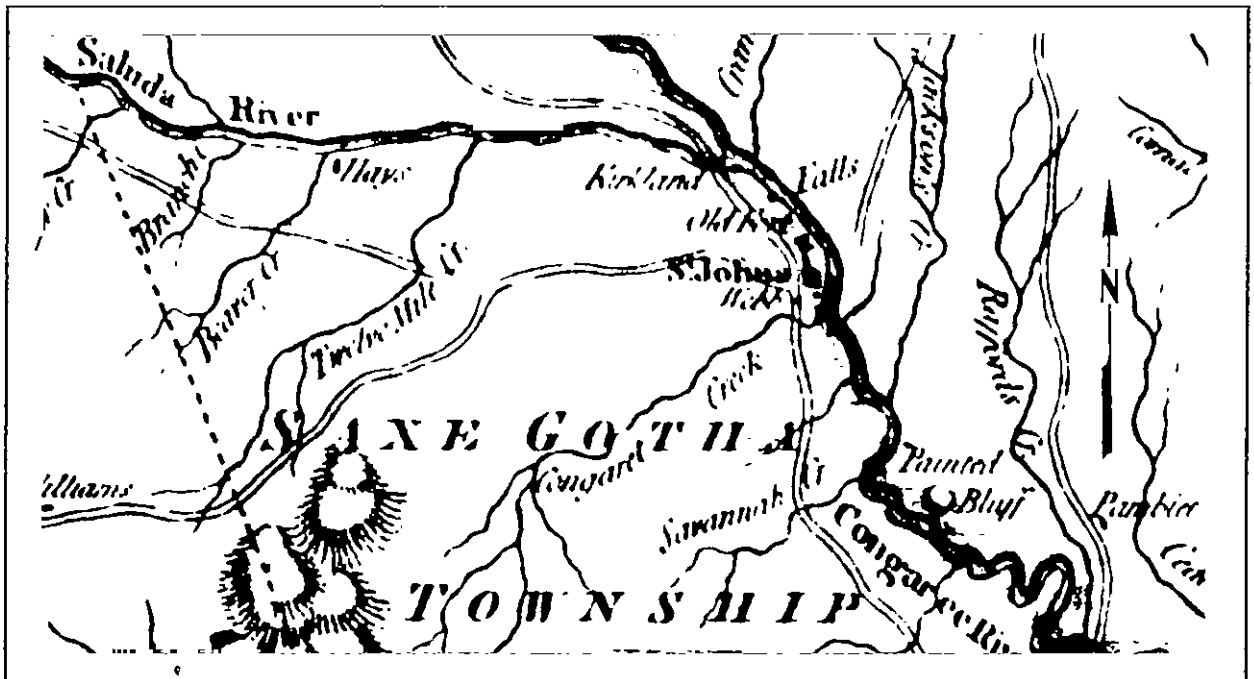
During the American Revolution Fort Granby, below the present town of Cayce, was the major outpost for British regulars in the area. In 1785, Lexington County was established in the Orangeburg District. With the development of Columbia, across the river, Granby Village declined in importance. The county seat was then moved from Granby Village to the town of Lexington (Central Midlands Regional Planning Council 1974:135-136).

Mills' Atlas (1972 [1826]) shows the project area as containing no subscribers within any of survey corridors (Figure 15). The Atlas, however, does reveal the location of Caughman's Mill, on the south side of Twelvemile Creek (previously recorded as archaeological site 38LX176). Settlements, where present, are typically restricted to the roadways.

By 1860 the county contained 73 saw mills, one cotton and wool mill, eight carriage and wagon makers, one sash and blind factory, two boot and shoe makers, one tannery, one blacksmith, one turpentine distillery, one printing establishment, and one wooden bucket factory. Also, Guignard Brickworks, established in 1804, was a prospering business. The largest single pre-war industry by far was the Saluda Factory on the Congaree (see Trinkley 1989).

During the Civil War Union forces invaded Lexington County and shelled the city of Columbia from the west bank of the Congaree. Figure 16 shows the Lexington area at the time of Sherman's march through the Springdale area. It also shows the location of Shult's Mill on Twelvemile Creek, which appears to be the location of what Drucker (1977:44) called Captain Roof Mill (38LX187). On Fourteenmile Creek to the north two mills are shown. Draft's is on the south side of the creek and is not within the project area, while an unnamed mill is also shown on the north side of the creek at the crossing of what is today the approximate route of SC 6, also outside the project corridor.

After the war most families were left destitute. Economic recovery was slow, aggravated by lack of capital and heavy reliance on an unproductive agricultural economy (Central Midlands Regional Planning Council 1974:136-137). By the early twentieth century the General Highway and Transportation Map of Lexington County (Figure 17) reveals that settlement is exclusively associated with the road system. Although a number of mills are still operating in Lexington County (for example a grist mill on Congaree Creek north of S-103, another between S-104 and SC 602, and another on Scouter Creek north of S-279, there were none operating in the project area. Drucker notes that local legend explains that virtually all of the mills in this area


Saluda River
Little River
Rawls Cr
Turkey Mill Cr
Rawls Cr
Cedar Creek
Saluda Gap
Pinnacle Mt
Table Rock
Caesars Head
Paris Mt
Paris Mt Cr
Jones Gap
Middle Saluda River
Rocky Bluff Cr
Rocky Bluff
Pumpkin Cen
Cougar Cr
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Saluda River
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Old Fields
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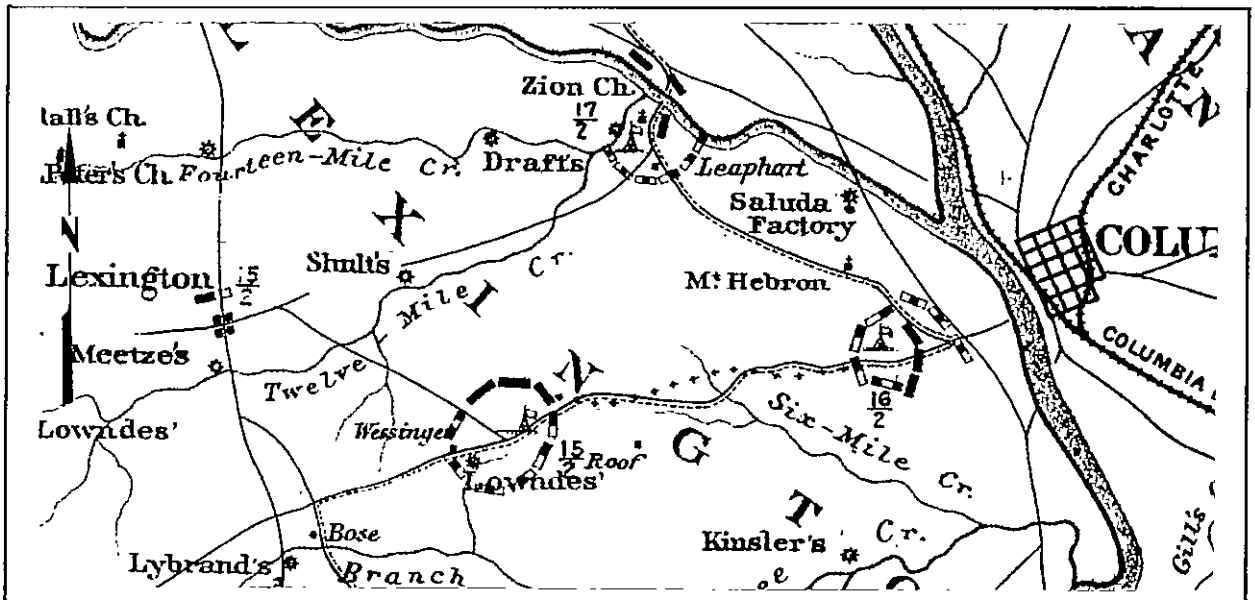

Figure 16. Portion of an 1865 map showing the Lexington area at the close of the Civil War (from the *Official Military Atlas of the Civil War*, Plate LXXX-4, reproduced at a scale of 2½ miles to the inch).

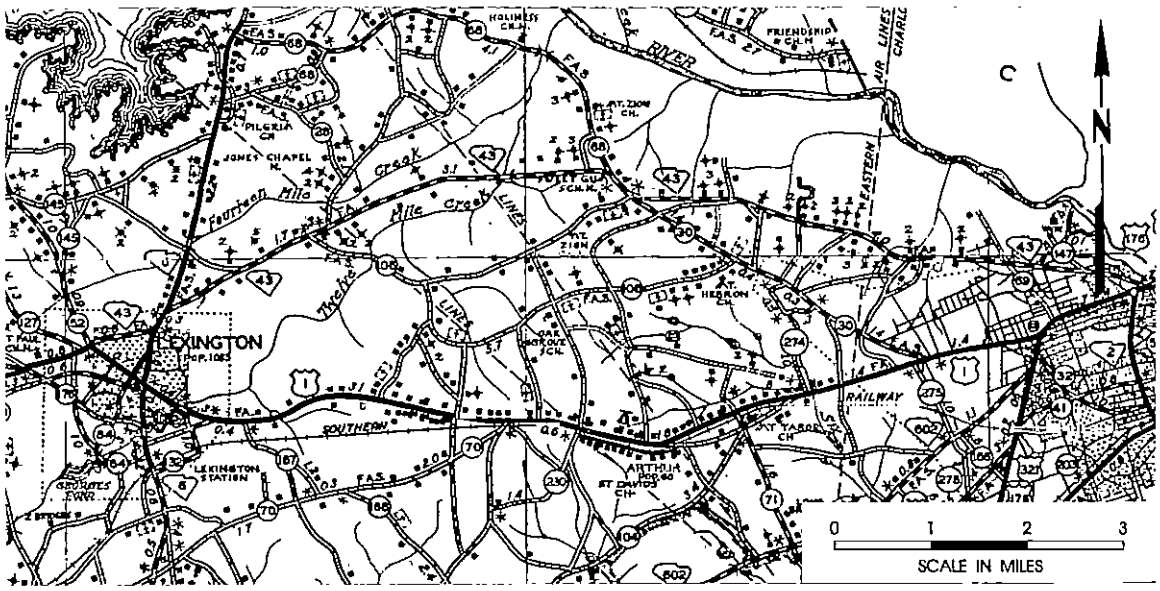

Figure 17. Portion of the 1941 General Highway and Transportation Map of Lexington County showing the project area.

were destroyed by Sherman's troops, although itseems more likely that they were either abandoned or were destroyed by the frequent floods of the early twentieth century.

RESEARCH STRATEGY AND METHODS

Research Strategy

The primary goals of this work were to identify, record, and assess the significance of archaeological sites within the approximately 25.1 miles of 50-foot wide construction corridor for the three projects. No major analytical hypotheses were created prior to the field work and data analysis. The research design proposed for this study is, as discussed by Goodyear et al. (1979:2), fundamentally explorative and explicative.

As discussed in the previous section, the project area has been subjected to multiple archaeological surveys. In particular, the Twelvemile Creek line has been surveyed by Carolina Archaeological Services nearly twenty years ago (Drucker 1977) using a combination of shovel testing and pedestrian surveys. The Congaree floodplain has been surveyed rather intensively, using pedestrian surveys, at about the same time (see, for example, Goodyear 1975).

Recent work in the Sandhills of North Carolina (see Trinkley et al. 1996) has suggested that the vast majority of sites likely go unidentified in shovel test surveys. This study explored a completely denuded drop zone, identifying sites which ranged in size from 52 m^2 to 35,575 m^2. Of the 40 archaeological sites and 85 isolated occurrences identified under these conditions, only 17 sites would have been identified using 30 m transect shovel testing. One secondary goal of this project, therefore, was originally to compare the results of these previous studies (which focused on identification of sites using pedestrian techniques) with those from a more "rigorous" study focused on the use of shovel testing. We quickly realized that this goal would not be met by the current study since the areas selected for these projects were either in areas of very low floodplain or else along areas of extensive previous disturbance. We found no new sites, but this is probably not the result of survey technique. It is more likely the result of the areas being surveyed.

Methods

The initially proposed field techniques for this intensive level survey involved the placement of a single transect through the corridor centerline at 100 feet or 200 feet intervals based on variables such as topography, drainage, and disturbance. In areas of well-drained soil, or clearly defined floodplains overlooking the creek shovel testing at 100 foot intervals would be undertaken. In areas of poorly drained soils, or where the corridor was on a very narrow floodplain, shovel tests would be conducted at 200 feet intervals. Where the corridor passed through broad upland areas distant from drainages shovel testing would be at 200 foot intervals, changing to 100 foot intervals as stream margins were approached. In addition, where there was obvious disturbance, such as along the edge or shoulder of roadways, shovel testing would be conducted at 200 foot intervals. Where there was open ground, such as along power line access roads or along fields, shovel testing would be used only to occasionally verify soil profiles. Figures 18 through 24 illustrate both the survey corridor, the survey methodology, and the sites identified. Throughout the study the minimal definition of a site was two or more artifacts within a 25 foot area.

Should sites be identified by surface collection and/or shovel testing, further tests would be used to help obtain additional data on site boundaries, artifact quantity and diversity, site integrity, and temporal affiliation. This information is required to determine site eligibility and is necessary for completion of the South Carolina Institute of Archaeology and Anthropology site forms. Photographs would be taken, if warranted in the opinion of the field investigator.

All soils from the shovel tests would be screened through ¼-inch mesh, with each test

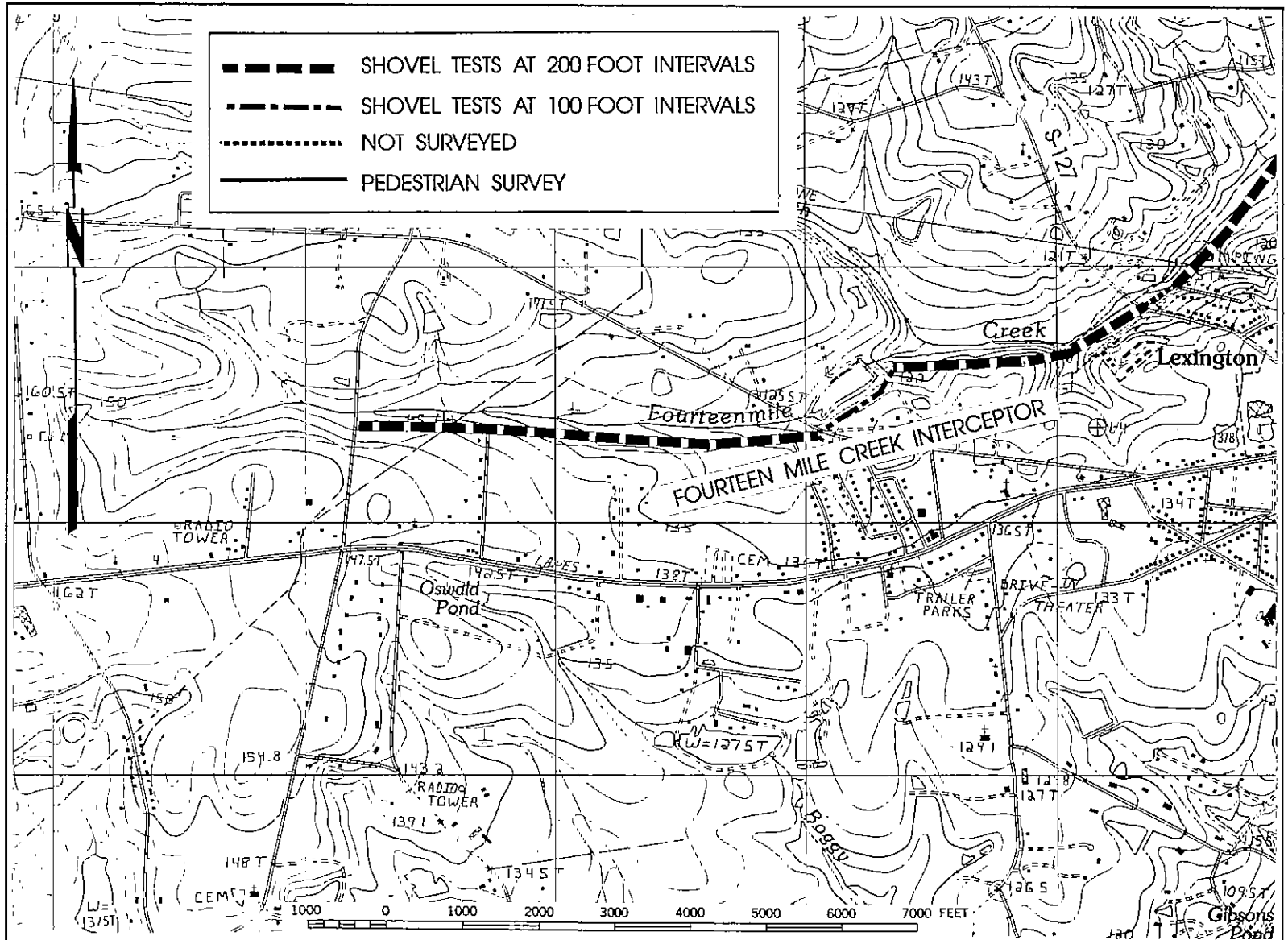

Figure 18. Fourteenmile Creek Interceptor from Wise Ferry Road (S-1726) eastward.

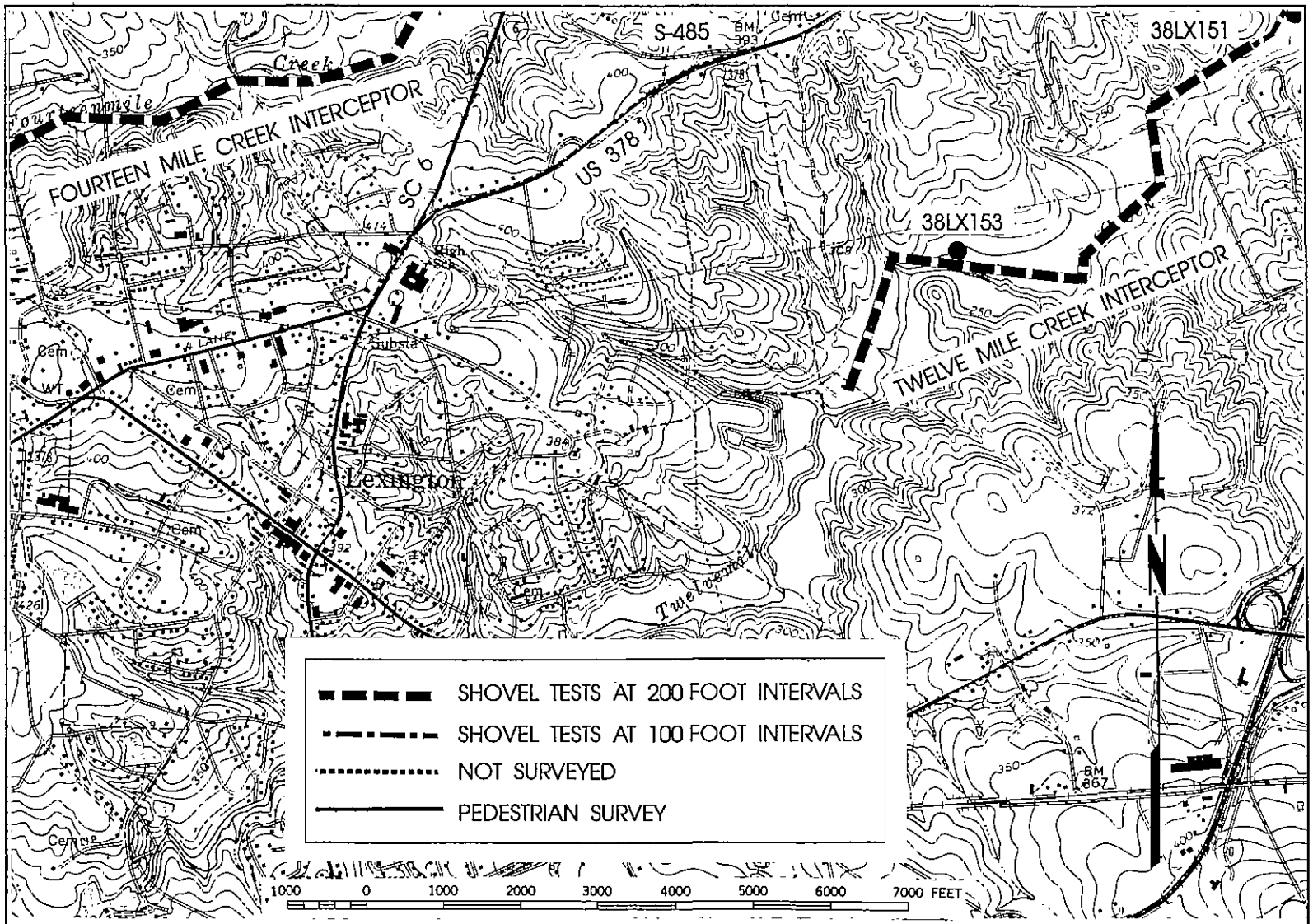

Figure 19. Fourteenmile Creek Interceptor corridor in the vicinity of Reed and Cherokee Roads and the western end of the Twelvemile Creek Interceptor corridor.

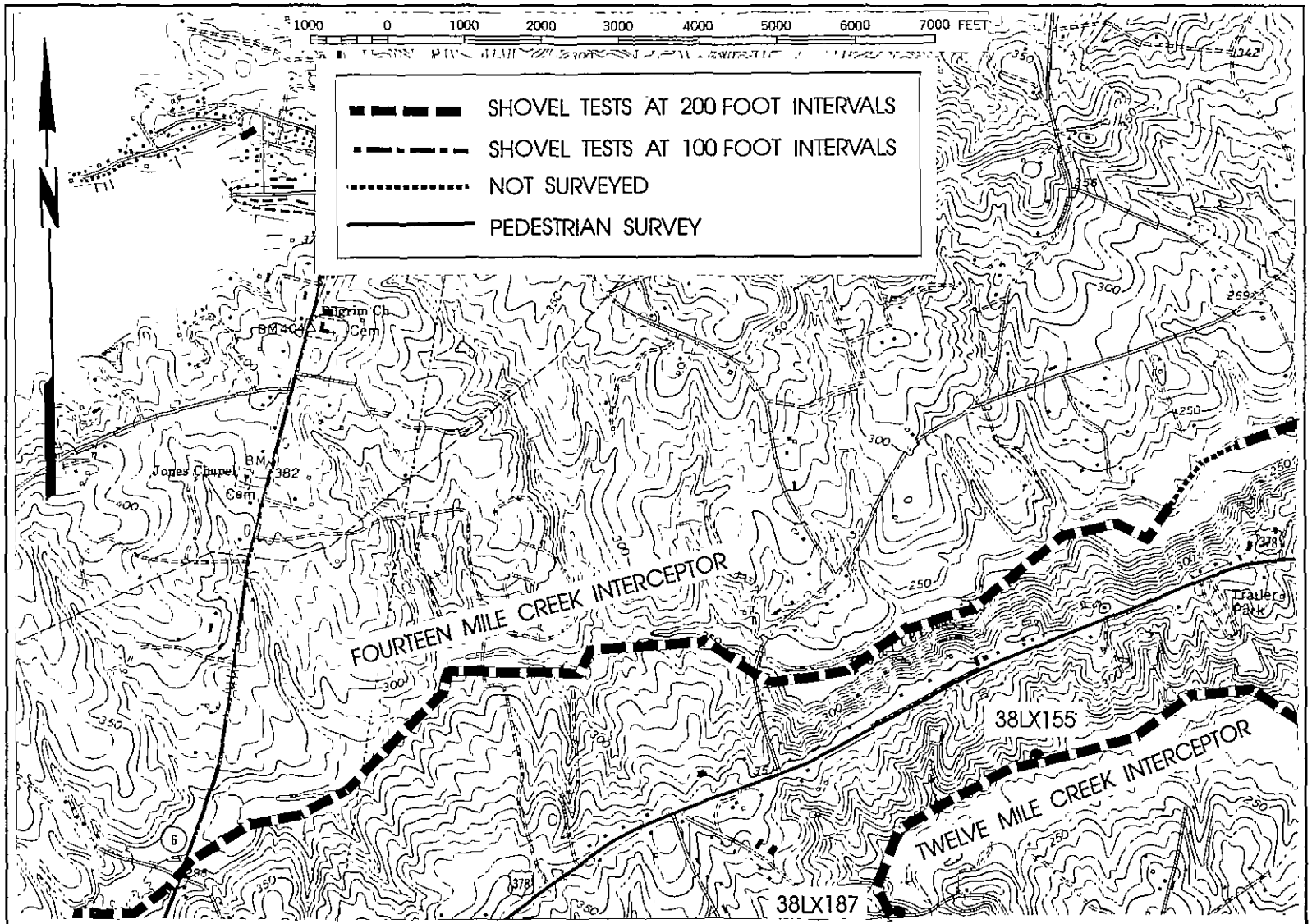

Figure 20. Fourteenmile Creek Interceptor corridor from S.C. 6 eastward and Twelvemile Creek Interceptor from Mineral Springs Road (S-106) eastward.

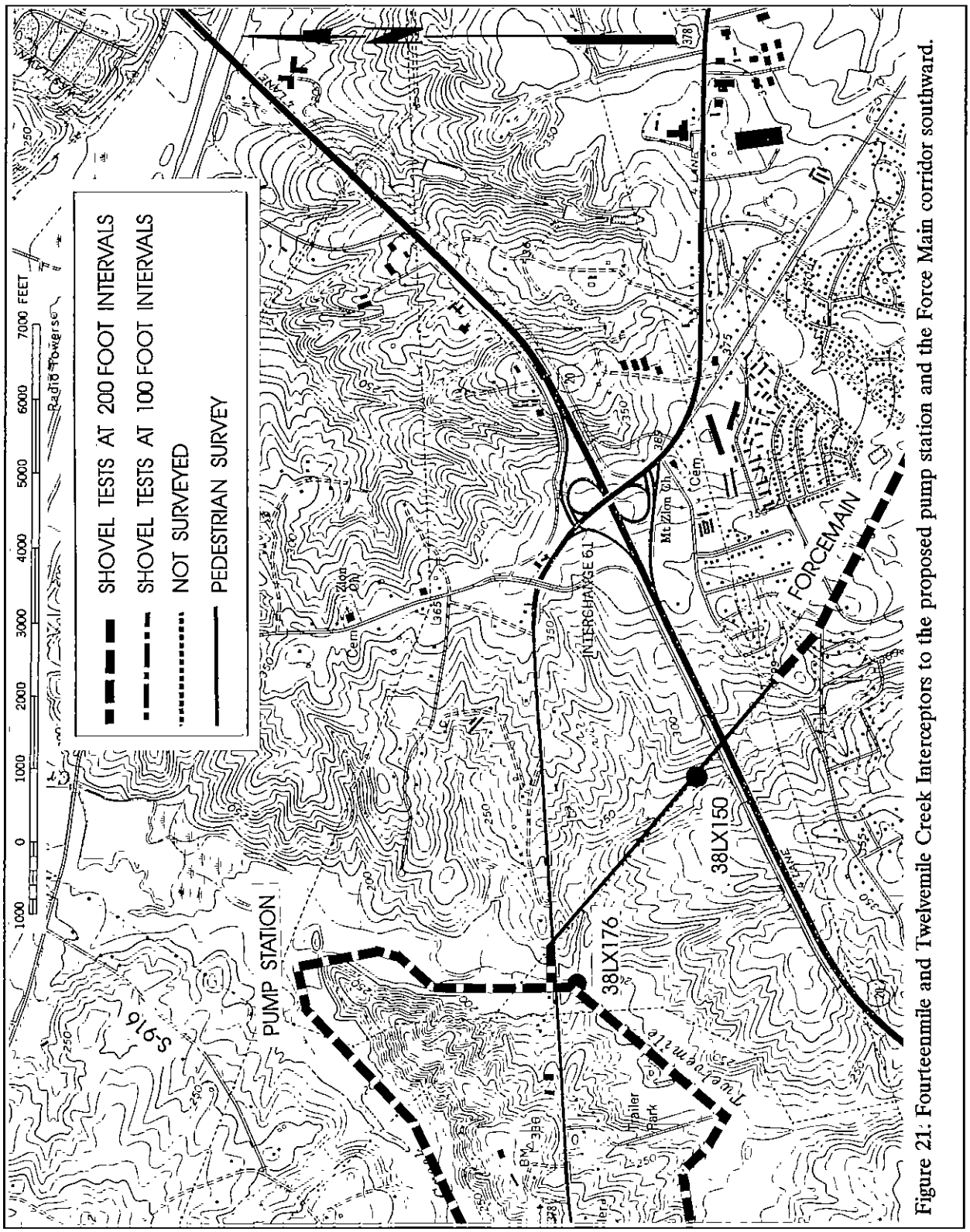

Figure 21. Fourteenmile and Twelvemile Creek Interceptors to the proposed pump station and the Force Main corridor southward.

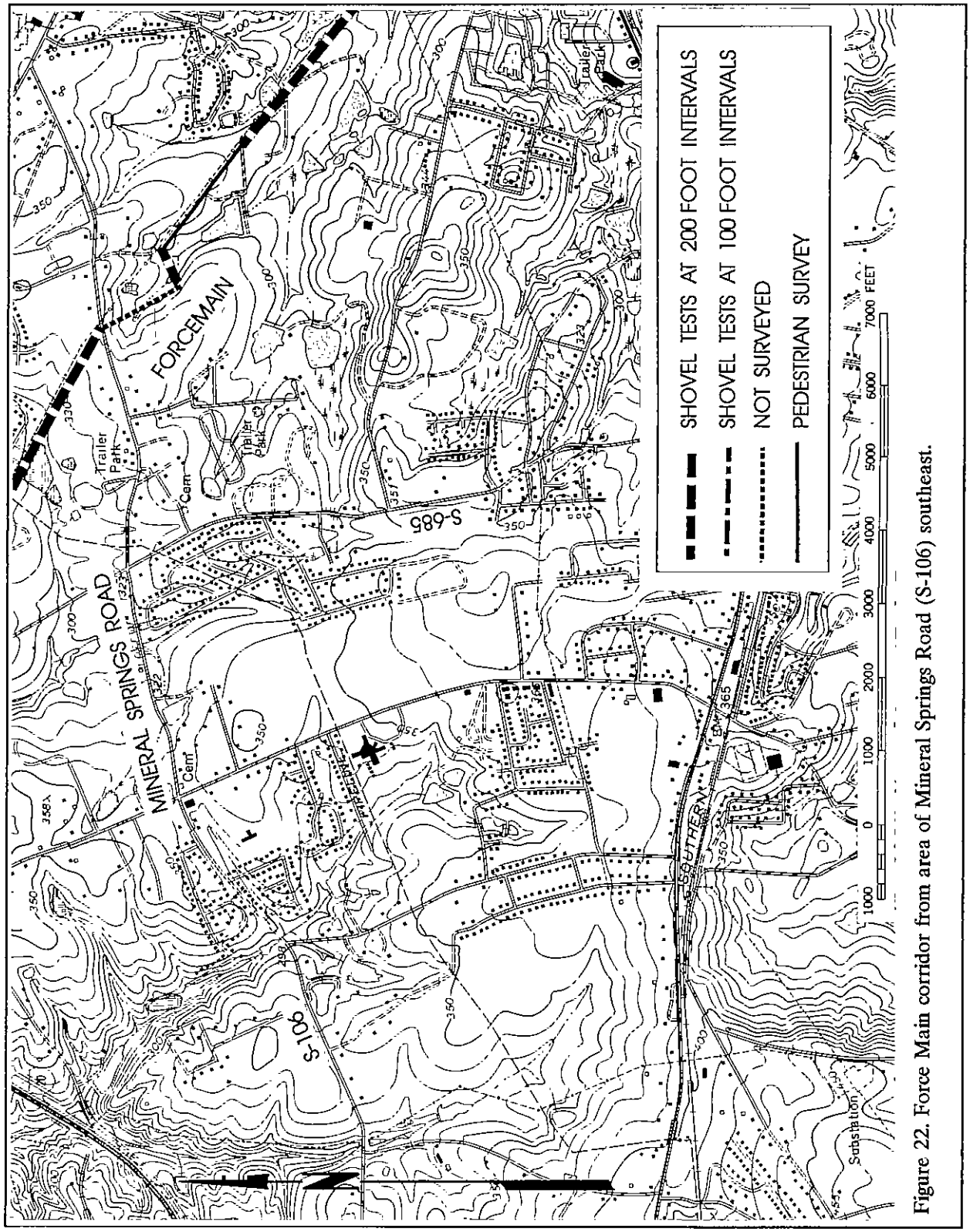

Figure 22. Force Main corridor from area of Mineral Springs Road (S-106) southeast.

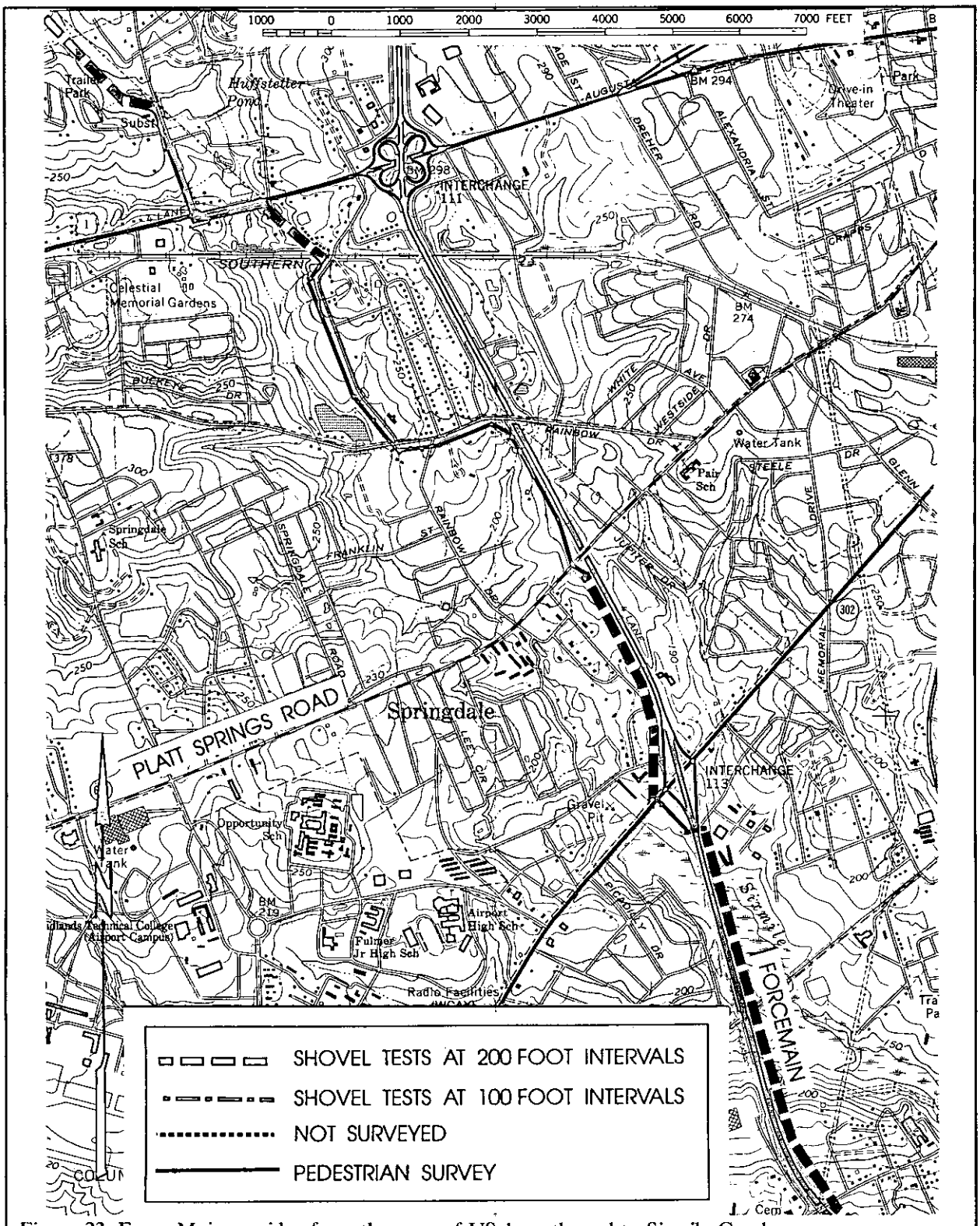

Figure 23. Force Main corridor from the area of US 1 southward to Sixmile Creek.

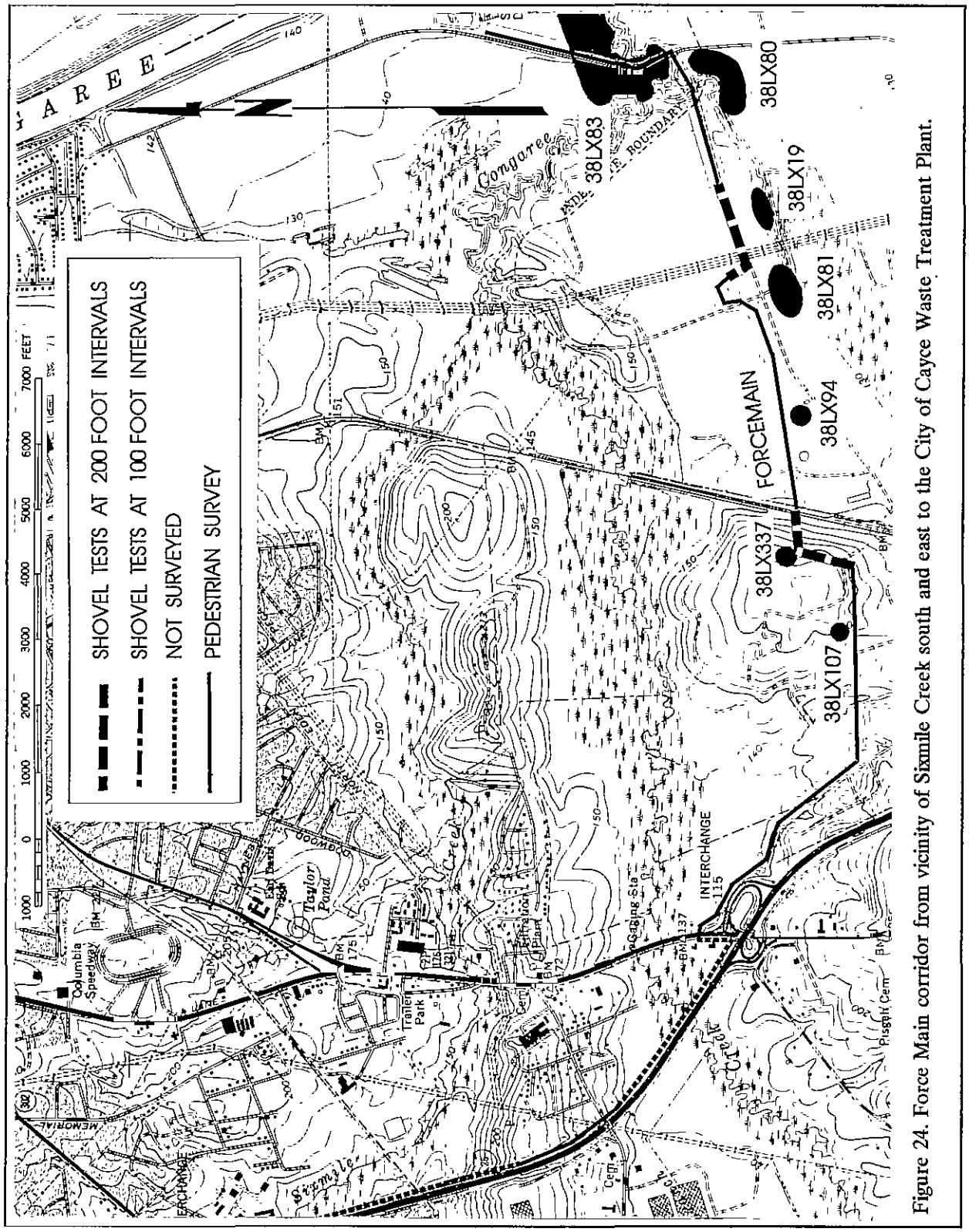

Figure 24. Force Main corridor from vicinity of Sixmile Creek south and east to the City of Cayce Waste Treatment Plant.

numbered sequentially. Each test would measure about 1 foot square and would normally be taken to a depth of at least one foot. All cultural remains would be collected, except for shell, mortar, and brick, which would be quantitatively noted in the field and discarded. Notes would be maintained for profiles at any sites encountered.

Actual field techniques did not deviate significantly from those originally proposed. Some problems were encountered in identifying the survey corridors. The City of Lexington had apparently surveyed the corridors earlier this fall or perhaps even last year. Consequently, many survey lines had completely grown over. Often it was possible to identify only occasional stakes or flagging. Occasionally only portions of the survey line could be identified. The plan sheets were generally of little use, since they frequently did not show the location of Twelvemile or Fourteenmile Creek. In areas where the alignment was "lost," we typically were able to pick it up again by following the creek and staying within 25 to 30 feet of its edge. In several areas we found multiple lines, apparently reflecting successive surveys or alignment changes. When it was not possible to determine which was the most recent, an effort was made to survey each alignment. Typically all but one would dead-end and could not followed. In only a few cases were properties not surveyed because the land was posted or otherwise unaccessible. The best located survey corridor was that of the force main, which follows well-defined features such as roads and transmission lines. While these problems added to the time spent on the survey, we do not believe they compromised the thoroughness of the study.

As a result of the archaeological survey four sites were identified (38LX150, 38LX151, 38LX176, and 38LX187). All of these had been previously recorded, but were re-identified in this study. No new sites were identified in the study and, in addition, no architectural sites were encountered in the corridor. Three sites which were thought to be in the general area of the corridor were not found; two (38LX153 and 38LX155) are presumed to be situated on higher ground, away from the project and the third (38LX83) was not encountered.

RESULTS OF SURVEY

Introduction

As a result of the archaeological survey of the Fourteenmile Creek Interceptor, the Twelvemile Creek Interceptor, and the associated Force Main project, four previously recorded archaeological sites were encountered (38LX150, 38LX151, 38LX176, and 38LX187). The Force Main crosses over a fifth site (38LX83), but no evidence of this site was encountered in the study corridor. Two additional sites were thought to be in the immediate area of the project (38LX153 and 38LX155), but were not encountered and are presumed to be off the project line.

Of the identified sites, one site (38LX150) is recommended not eligible for inclusion on the National Register of Historic Places. Another site (38LX176) is likely eligible for inclusion on the National Register based on previous survey efforts, but the proposed action is evaluated to have little effect on the site. The final two sites (38LX151 and 38LX187) are recommended as potentially eligible. In the case of these sites, re-routing the proposed corridor is the preferred option. Otherwise, additional testing and historical research will be necessary to allow evaluation of the sites' eligibility for inclusion on the National Register.

Identified Sites

38LX83

This site was first recorded by David G. Anderson in 1974 as a result of surveys for the proposed Southeastern Beltway (today know as I-77). The site was identified as a series of earthworks built during the Civil War to defend Columbia's southern border along Old State Road. It is also the location of a skirmish fought on February 15, 1865 as Sherman's army advanced toward Columbia. Situated immediately to the north of the Old State Road bridge over Congaree Creek, the central UTM coordinates for the site were estimated to be E497030 N3755090 and the site was initially estimated to cover an area "several hundred yards along [the] north side of the creek on both sides of the road [i.e., to the east and west of Old State Road]" (38LX83 site files, S.C. Institute of Archaeology and Anthropology, University of South Carolina). Anderson noted that the earthworks were located in the mixed pine and hardwood forests along the creek edge, essentially situated on a bluff overlooking the creek. He noted that "immediately away from the thin forested strip along the creek the land is intensively cultivated and no signs of earthworks are seen" (38LX83 site files, S.C. Institute of Archaeology and Anthropology, University of South Carolina).

Activity subsequent to Anderson's survey seems limited to a brief metal detector survey in 1988 by an anthropology student whose activity appears to have been limited to the adjacent cultivated fields. No finds clearly associated with the Confederate use of these earthworks, or the Union breach of them, were recovered (38LX83 site files, S.C. Institute of Archaeology and Anthropology, University of South Carolina).

An excellent overview of the site and its history is available in Anderson (1974a) and a portion of this document is quoted at length here:

> In the area where Old State Road crosses Congaree Creek the outlines of extensive earthworks may be seen on the north side of the creek [Figure 25]. . . . The floodplain of the creek itself and the adjoining ridgeline overlooking it are overgrown in hardwoods. Away from the creek lie extensive cultivated fields. The earthworks that remain are located in the

wooded belt along the ridge overlooking the creek. Whether they ever extended into the plowed fields away from the creek is unknown.

Of the fortified *tete-de-pont* on the south side of the bridge no trace remains. Cultivated fields run almost up to Old State Road on either side, and in these fields as well as in the thin line of trees along the road there are no discernable earthworks or depressions, or even artifacts suggesting the position of the salient. Due to its apparent temporary nature, it may have left little indication of its presence even right after it was abandoned.

Crossing Congaree Creek heading north, to the east are a line of earthworks running toward Congaree River. . . . The earthworks in this area are characterized by a low ditch about three feet deep and to 10 feet wide, with the earth heaped up to the front facing the creek. On this side of the bridge these earthworks are densely overgrown and extensively disturbed in many areas by drainage ditches, and in one area by an apparent borrow pit. As one moves further east from the ridge the earthworks become less and less distinct, until near the area where the creek turns south, where they are impossible to separate from the drainage ditches and other disturbances of a related nature in the area. . . . .

To the west of the bridge extensive and clearly defined earthworks parallel the creek for at least 900 feet before becoming indistinct. Near the bridge these earthworks are standing to a height of five feel above the surrounding fields and are about 25-30 feet thick at the base and about 10-15 feet wide at the top in the immediate area of the bridge. In this same area a ditch about 25 feet wide and 10 feet deep from the top of the earthworks is located on the creek side. The ditch is located on the edge of the ridgeline overlooking the creek floodplain; advancing forces climbing the ridge would have to drop down into the ditch and climb up the earthworks on the far side to reach the defenders. This arrangement extends for roughly 350 feet in the vicinity of the bridge in a rough semi-circular shaped pattern . . . . .

The earthworks described would appear to be at least a remainder of the Confederate defenses along Congaree Creek. The massive banked-and-ditched area near the bridge is suggestive a strong-point, serving as an ideal vantage point for the positioning of artillery to cover approaches to the bridge. The less pronounced earthworks paralleling the creek would provide relatively good cover for riflemen guarding the flanks of the bridge.

The area around the bridge has traditionally been a source of military ordnance and has been in fact extensively damaged from the depredations of relic collectors. All along the length of the earthworks, and both in front and behind them, the scars of old potholes may be seen (Anderson 1974a:145-147).

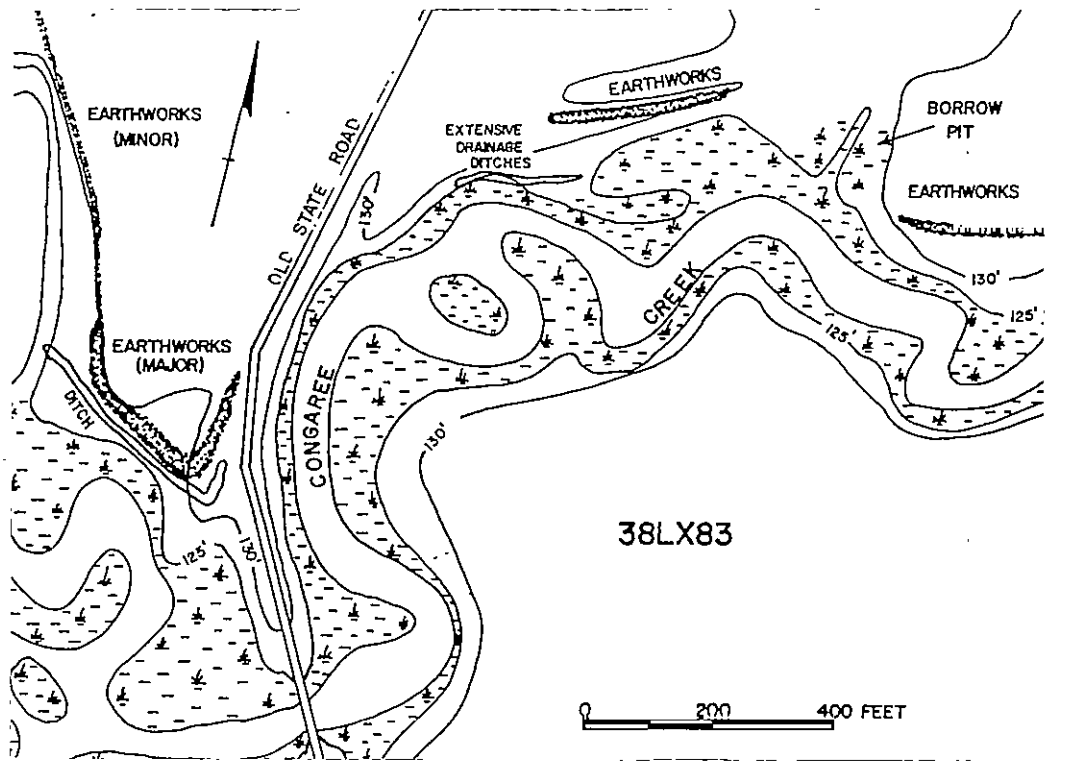

Figure 25. Confederate earthworks at 38LX83 (adapted from Anderson 1974a:Figure 6).

Anderson makes no mention of any earthworks at the bridge location, or within the cultivated fields on either side of Old State Road. The site has never received a clear National Register eligibility recommendation. Nevertheless, there is certainly enough information to suggest that the site is potentially eligible, representing one of the few remaining locations reflecting the failed Confederate efforts to defend Columbia from Union troops toward the close of the Civil War.

The current Force Main project, while crossing this area, stays entirely within the current Old State Road roadbed. This is an area which has been periodically scraped, repaired when rutted, and within the last decade graveled for easier maintenance. The current survey, which included a pedestrian survey of the road edges from the bridge northward (where fresh soil was exposed and where gravel did not cover the ground surface) found no evidence of any cultural remains.

The Force Main crosses site 38LX83 but appears to have no adverse effect since no earthworks are encountered and no archaeological remains of the site were found within the project corridor. As a consequence, no further archaeological research is recommended for the currently proposed corridor or action.

38LX150

Site 38LX150 was recorded by the Carolina Archaeological Services survey of a previous Twelvemile Creek corridor in 1977 (Drucker 1977:23-24). At that time the site was described as being situated "200 yards north of I-20 on power line swath connecting SC 378 and I-20, 40 yards west of Twelvemile Creek, 0.4 mile from 378 on frontage road. The site is classified as "non-locatable" by the S.C. Institute of Archaeology and Anthropology and consequently no UTM coordinates were recorded. The soils were recognized as the Chenneby Series and the site was

thought to measure about 150 feet east-west by 350 feet north-south. Materials recovered included one metavolcanic Morrow Mountain point, 66 quartz flakes, and eight tools (38LX150 site file, S.C. Institute of Archaeology and Anthropology, University of South Carolina).

Drucker describes the site as "a fairly dense scatter of quartz tools and debitage," noting that materials were collected from erosional areas. A single test unit placed within the site boundaries failed to reveal any cultural remains. At the time of the study, she noted that the site "should be considered to be of cultural significance, since knowledge of Middle Archaic occupation of the Fall Line is little understood" (Drucker 1977:24).

During the current study the site was again recognized based on materials recovered from erosional areas in the vicinity of the South Carolina Electric and Gas (SCE&G) transmission line easement (Figure 7). Vegetation in this area consists of sparse grass, which had been cut not long before the survey. To the east are pine woods, which had been recently logged, resulting in good ground visibility and extensive erosion. To the west is a mixed pine and hardwood forest with dense vegetation. The site was found to be situated about 800 feet north of the frontage road in the center of the SCE&G easement. This location is almost identical to that shown on the SCIAA site maps and the central UTM coordinates for this site are E485080 N3762850. The soils are consistent with the Herndon silt loams typical of ridgetops and gentle side slopes. The A horizon was almost entirely eroded away within the powerline easement, with only 0.1 foot of a yellowish-brown (10YR5/4) silt loam found overlying a strong brown (7.5YR5/6) clay to an excavated depth of 0.6 foot. Toward the edge of the easement A horizon soils to depths ranging from 0.4 to 0.5 foot were encountered.

The site was encountered on the west facing side slopes overlooking a small intermittent drainage of Twelvemile Creek about 100 feet to the west. Twelvemile Creek itself (the closest permanent water supply) is about 3500 feet to the west, so it seems likely that this site was situated to take advantage of the relatively level area overlooking the small feeder drainage.

The pedestrian survey recovered 14 quartz flakes and a single fragmented quartz biface from two loci or areas. The southern one, which contained nine flakes and the one biface, measured about 100 feet north-south (roughly paralleling the small feeder creek) and about 75 feet east-west. A series of eight shovel tests were placed in this area to help determine site boundaries, explore artifact density and diversity, and determine if any intact materials were present. No materials were recovered from any of the tests and the soil profiles were consistently deflated, indicative of heavy erosion.

A second surface loci, measuring about 75 feet north-south by 50 feet east-west, was found about 400 feet to the north. In this area five quartz flakes were recovered. An additional eight shovel tests were excavated, again with negative results (Figures 21 and 26).

These two loci have been combined since both appear to fall within the originally defined parameters of 38LX150. Given the greatly diminished quantity of tools and even flakes recovered from this study, compared with the 1977 survey, it may that the site has either been significantly collected in the interim, or that the original survey collected most of the material and relatively little has been exposed through erosion in the following 19 years.

Regardless, the current study found no intact remains and a very diversity in materials present at the site. The 16 shovel tests consistently demonstrate a site deflated by erosion, probably associated with the original construction and subsequent maintenance of the powerline easement. It is unlikely that the site, in its current condition, could address significant Middle Archaic research questions. Consequently, 38LX150 is recommended as not eligible for inclusion on the National Register of Historic Places and no further management activities are necessary.

38LX151

This site was found on the terrace of

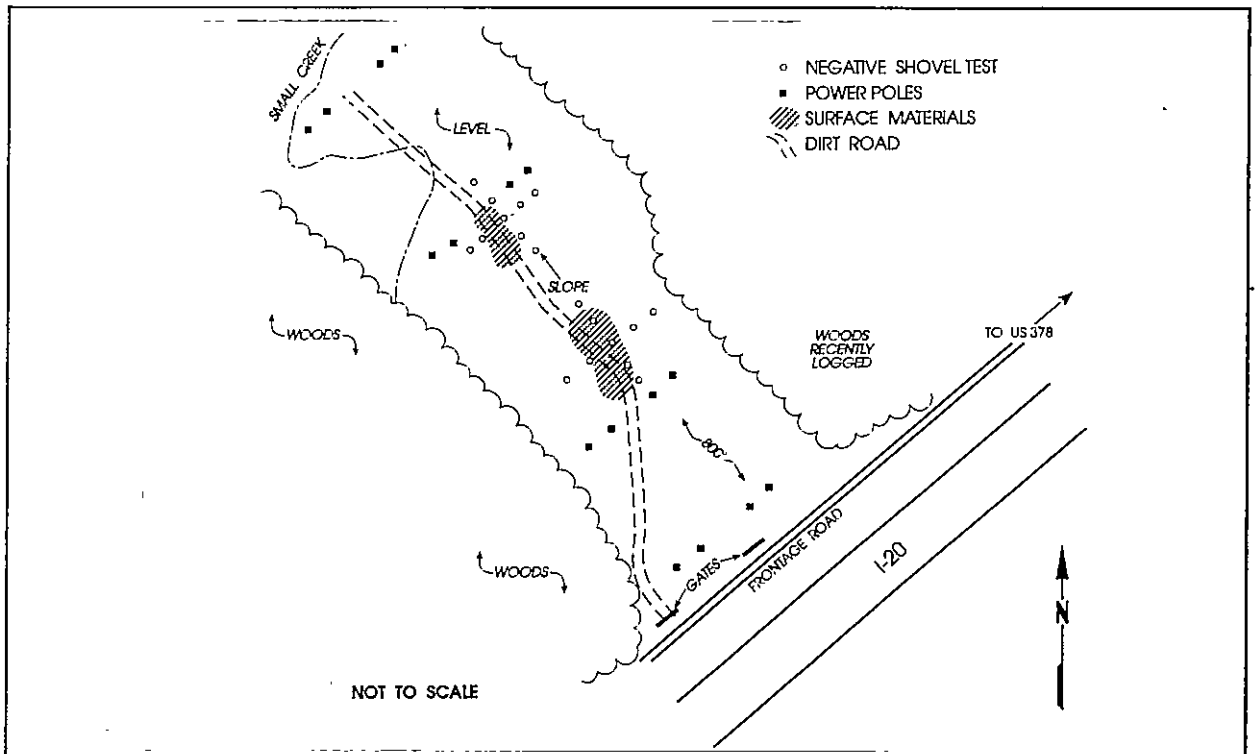

Figure 26. Sketch map of 38LX150, loci, and shovel tests.

Twelvemile Creek about 400 feet south of the Mineral Springs (S-106) bridge during the Carolina Archaeological Service survey of Twelvemile Creek (Drucker 1977:24). It was reported to consist of a "dense scatter of quartz tools and debitage" covering an area of about 195 feet along the creek and extending about 180 feet inland. The accompanying map showing the site location, however, reveals a more linear site, measuring about 500 feet northeast-southwest by 100 feet northwest-southeast.

The collection from the initial survey, made under excellent conditions when the agricultural fields were open, produced blades, an end scraper, used flakes, blanks, fire cracked rock, and over 100 flakes. The study notes that although no diagnostic points were recovered, several of the blades resemble Late Archaic Savannah River Stemmed types (Drucker 1977:24).

Although only one of three "test cuts" produced artifacts, Drucker notes that the site's "potential significance should be assumed, as data from Fall Line Archaic occupations are only just beginning to be compiled" (Drucker 1977:24).

The site was again recorded during this study. The original site description and accompanying maps are relatively accurate. The central UTM coordinates are E482040 N3761960 and the site is situated on Congaree soils. In this particular area there is a floodplain about 300 feet in width developed on the north or east edge of Twelvemile Creek. Elevations are about 3 to 4 feet above the creek.

There is a fringe of hardwood forest varying from about 15 feet to nearly 30 feet in width separating the creek from the adjacent agricultural fields, which were fallow at the time of this survey. No materials were visible on the surface and the site was initially encountered during routine shovel testing along what we presumed to be the corridor alignment about 30 feet inland from the creek (placing the alignment

just within the cultivated field).

Once identified a series of shovel tests were excavated at 25 foot intervals parallel to the creek and along the posited project alignment. The site was documented to extend a distance of about 200 feet northeast-southwest and to extend inland 100 feet (Figures 19 and 27). These boundaries resemble those of the previous survey in placing the site parallel to the creek, but suggest that it is somewhat smaller than originally thought. Of course the difference in site size may be the result of different survey techniques (estimating site size based on surface scatter compared to estimating site size based on shovel testing). Regardless, the current study also revealed that the site extends to the creek bank, suggesting that the creek is gradually eroding into the site.

Of the 15 shovel tests excavated in the site area, nine were positive. The tests produced two distinctive soil profiles. Those from the central core of the site consisted of about 0.8 foot of dark-brown (7.5YR4/4) sand (often with abundant river gravel) overlying a yellowish-brown (10YR3/4) silt loam subsoil. To the north and south edges of the site the gravels in the Ap horizon became less frequent. The Ap horizon soils became more clayey and the subsoil was a stiff yellowish-brown clay exhibiting little silt.

These shovel tests produced 49 quartz flakes, one fragment of quartz raw material (perhaps fire cracked), a highly fragmented corner notched point (probably a Kirk Corner Notched, although it is so damaged as to make a positive identification problematic), and a single small Deptford Check Stamped sherd. This collection is consistent with a probable Early Archaic through Middle Woodland occupation, extending the original temporal limits of the site.

Shovel Test (ST) 8 produced two quartz flakes; ST 9 yielded two quartz flakes; ST 19 produced three flakes; ST 22 produced two quartz flakes, and the single Deptford sherd; ST 23

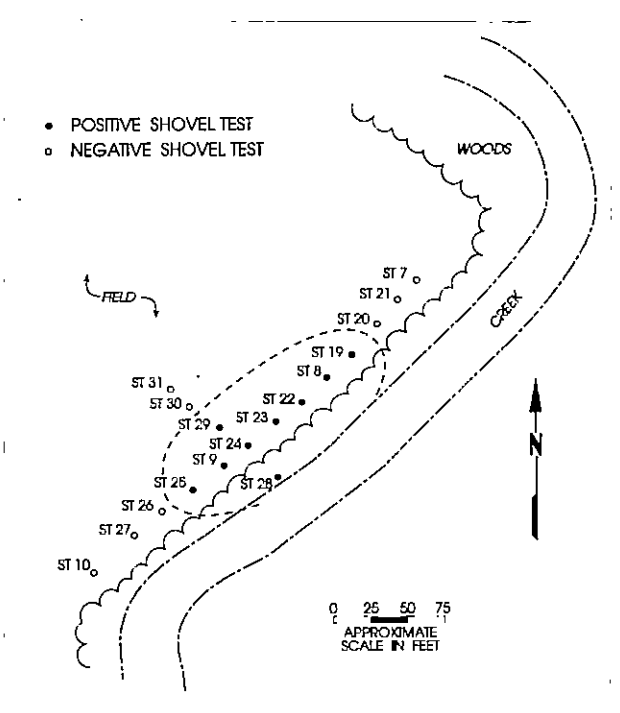

Figure 27. Sketch map of 38LX151 showing site boundaries and shovel tests.

produced six quartz flakes, one fragment of raw material, and the one projectile point; ST 24 yielded 11 quartz flakes; and ST 25 yielded four quartz flakes. Shovel Test 28, on the edge of the creek bank, produced seven quartz flakes while ST 29, further inland, produced 12 quartz flakes. This distribution suggests that there may be a central site core, perhaps measuring about 100 feet in diameter.

A clear assessment of 38LX151 is not possible. A number of factors might be used to argue that the site is not eligible. For example, the shovel tests failed to reveal any intact materials below the plowzone. There is also little site situated in the woods line (which may not evidence as deep or intensive plowing as the portion of the site in the field). Finally, there seems to be a relatively low density of tools. On the other hand, the site does exhibit a considerable temporal range. It also reveals a central core where artifact density appears to be significantly higher. If the assemblage from the first survey is also considered, there are a range of tool forms suggestive of a short duration camp.

In order to obtain an eligibility determination, we believe that additional testing, using dispersed 5-foot units will be necessary to determine if there are intact deposits in the site. If all of the materials are present only in the plowzone then it is likely that the site is not eligible. Alternatively, if evidence of deeper deposits (perhaps a sheet midden), evidence of intact materials in the woodsline, or evidence of features can be documented then the site can likely be recommended as eligible for inclusion on the National Register.

The City of Lexington may chose to avoid the need for additional testing by re-routing this corridor. There are two equally satisfactory alternatives. We have surveyed the portion of the field further inland from the creek and no other sites were encountered. Consequently, the corridor could be moved to the west. We also briefly surveyed the area opposite this site on the east bank of Twelvemile Creek and found no archaeological remains. Consequently, the corridor could shift across the creek, to the east bank, for a short distance in order to avoid 38LX151.

38LX176

This site was also identified by Carolina Archaeological Services as a result of their 1977 survey of Twelvemile Creek. Identified as Leaphart Mill, the site was reported to be located "at the confluence of Twelve Mile Creek and a feeder creek within a broad floodplain between two high dissected ridges" about 300 feet south of the Twelvemile Creek bridge on U.S. 378 (Drucker 1977:36).

Based on the initial survey the only visible remains were "log breakfalls located across the width of the western creek bed, although it could not be determined whether these logs formed part of the mill's operation or were associated with the remains of a wooden bridge and raised earth road also present at the site" (Drucker 1977:36). No materials were collected from the site, but Drucker commented that the site was "historically significant" and should be avoided. In fact, the data collected by Drucker does suggest that the site is eligible for its contribution to our understanding of Lexington's transportation network and the development of roadways and bridges during the nineteenth century. The site appears to be better classified as an industrial site representing a road way and bridge system than as a mill site.

During the current survey at least portions of this site were relocated. This was one of the areas where the City's corridor was poorly marked, causing considerable confusion. This is compounded by the very dense vegetation in this area and the fact that at least one island is formed in the creek in this area.

Only that portion of the site on the western bank are considered by this study and no effort was made to identify or further evaluate the main mill site, which may be situated further to the east. A series of shovel tests were excavated in the corridor at 100 foot intervals. None of these tests were positive. An additional nine shovel tests were excavated at 25 foot intervals to "fill in" between the 100 foot tests for a distance of 300 feet, although again none of these tests yielded artifacts.

The only remnant of this site encountered in the survey is the roadbed referenced by Drucker. It runs roughly northwest-southeast, at an angle to the existing US 378. This roadbed is shown by the project plan sheets in profile, revealing that it achieves an elevation of about 203 feet, compared to the surrounding floodplain's elevation of about 198 feet (sheet 4, stations 39 through 42). Although only a portion of it was followed, it appears to extend back to a natural ridge nose. This suggests that the original road followed, as much as possible, existing ridgelines.

This portion of the site is situated 250 feet south of US 378 (Figure 21) and the central UTM coordinates are E484200 N3762600. The soils in the area are the Enoree series typical of flats and depressions along the stream floodplains. The A horizon soils consisted of up to 0.8 foot of brown to grayish-brown (10YR4/3 to 10YR5/2) silt loam overlying a brownish yellow (10YR6/6) sandy loam.

As previously mentioned, the vegetation in this area was especially dense, consisting of bottomland hardwoods with a dense understory of brambles, trumpet vines, and poison ivy. Portions of the adjacent cry creek bed were covered in ferns and other wetland vegetation. Further upland, toward the ridge, there was an increase in pine (although the understory vegetation remained essentially the same).

Based on our best assessment of the site corridor, the project will only impact the posited roadbed (which was included as part of the previously defined mill). We could find no evidence of the mill itself in the project area, suggesting that it is situated further to the east.

No route change appears feasible in this area. Shifting the corridor further inland is probably not feasible given the steep topography. Shifting the corridor to the eastern side of the creek would create even greater involvement with the site.

While it is reasonable that the roadway and associated bridge remains are eligible for inclusion on the National Register of Historic Places, as suggested by Drucker in her initial survey, the proposed activity will impact only a small portion of the roadway. There is no indication that the mill will be affected. It may be appropriate to view this in much the same way as 38LX83: while the interceptor crosses a portion of site 38LX176, the impact appears to be minimal and to affect only a relatively insignificant portion of the site.

We believe that an appropriate mitigation of this is (1) for the project construction corridor to be made as narrow as feasible, (2) for the construction corridor to be cleared by hand, (3) for the road to be documented through black and white photography, and (4) for a topographic map of the roadway exposed by the project (and up to 100 feet on either side) to be made by the City of Lexington. This should recover the useful information and allow the project to move forward.

38LX187

This site was identified by Carolina Archaeological Services as a result of their 1977 survey of Twelvemile Creek. Identified as the Captain Roof Mill (based on Mineral Springs Road being previously called Captain Roof Road), Drucker notes that it was "a prominent local nineteenth century gristmill/sawmill" (Drucker 1977:44). At the time of her survey:

> two log breakfalls were visible across the creek width, which is approximately 35' at this point, and two 8" beams lay in the creek. Another beam was observed half-buried in the western creek bank, and several more were observed to have washed downstream for a distance of approximately 150'. No remains of a dam were visible, but a local informant recollects both a dam and a large millwheel at the site when he was a child.
>
> Careful inspection of the immediate area could locate no structural or mechanical remains of either the mill or of a tannery

reportedly operated by the Sox family at the millsite after the mill has ceased operation (Drucker 1977:44).

Drucker noted that the site was one of "local historical significance" and recommended additional archaeological testing as well as historical research (Drucker 1977:44; 38LX187 site file, S.C. Institute of Archaeology and Anthropology, University of South Carolina).

This site was identified within the project corridor on the west bank of Twelvemile Creek, 100 feet south of the Mineral Springs (S-106) bridge over the creek. The central UTM coordinates are E481960 N3762020

The site is situated on the relatively broad floodplain overlooking the creek. Vegetation consists of moderately dense brambles among hardwoods growing within 30 to 40 feet of the creek. Further inland is a fallow field and further to the south is site 38LX151. The soils in this area are the well drained Congaree silt loams.

The site was not encountered in any of the shovel tests originally excavated at 100 foot intervals, nor were any materials found in a series of four additional shovel tests placed down the centerline at 25 foot intervals. Three additional shovel tests were excavated inland at 25 foot intervals, but they too failed to recover any cultural material (Figures 20 and 28; see also Figure 6 for an overview of this site area).

The timber breakfall originally reported by Drucker was still present (Figure 6), although the range of timbers reported was not duplicated in this study, suggesting that the site has suffered additional losses in the last 19 years. We did, however, identify a metal mill waterwheel (Figure 29) and, at the end of the adjoining shaft, a metal gear (Figure 30).

These represent the remains of an

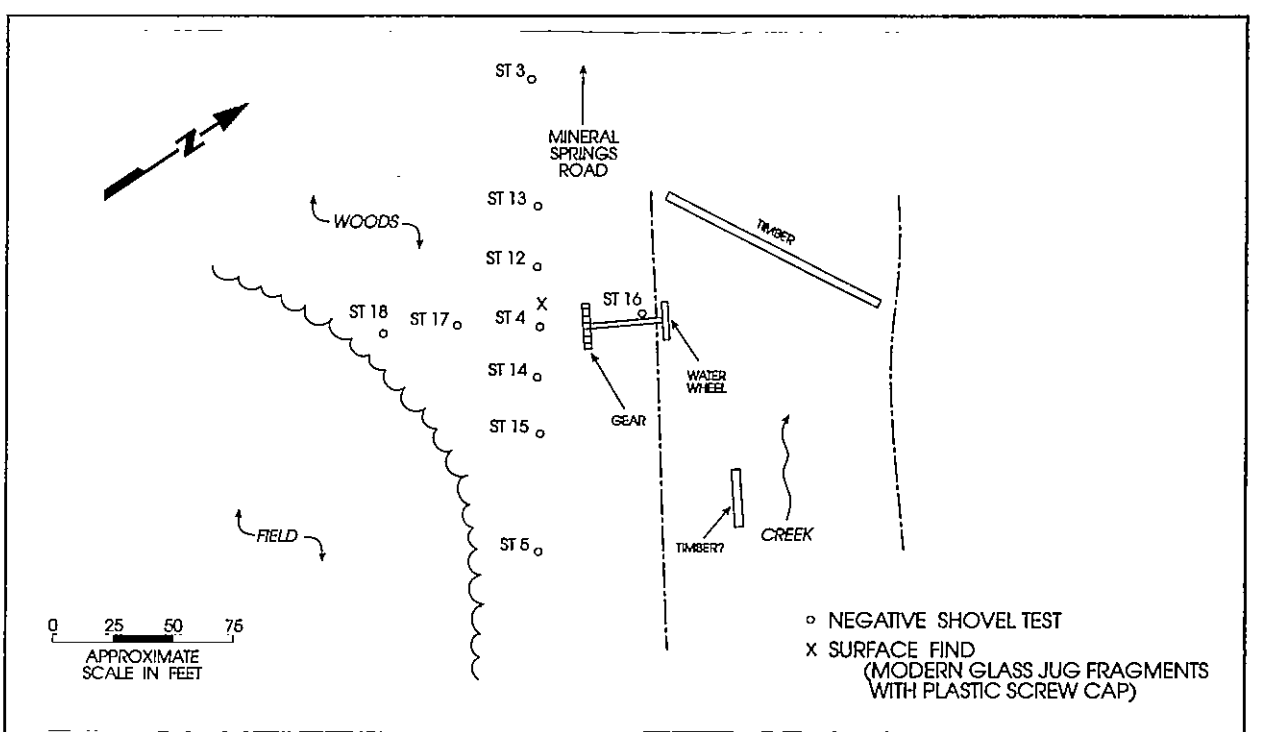

Figure 28. Sketch map of 38LX187 showing the location of the mill wheel and gears, and shovel tests.

Figure 29. Metal mill wheel on the southwest bank of Twelvemile Creek at 38LX187. View is to the east.

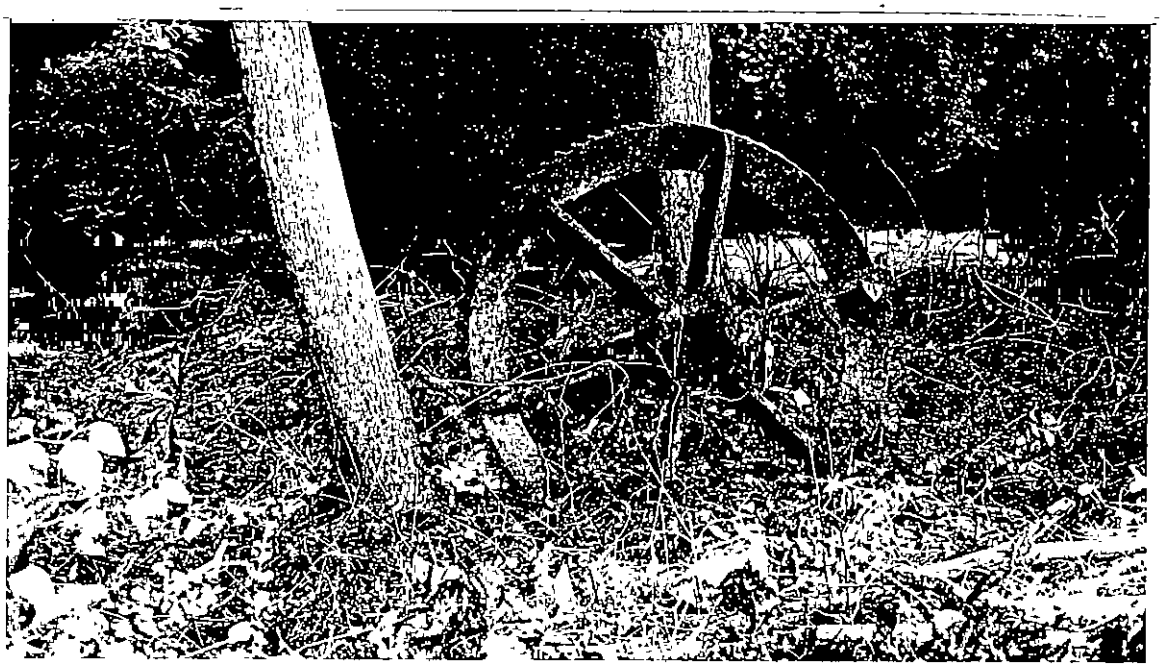

Figure 30. Metal mill gears at 38LX187. At the end of the shaft is the mill wheel. View is to the northeast.

undershot wheel which turned the gear into which a smaller trundle fit, gearing up the revolutions, so that the trundle would make upwards of six or seven revolutions for every turn of the wheel. The trundle turned a spindle which, in turn, revolved the lower stone, grinding the meal. A similar, albeit earlier gearing arrangement is shown in *Rees's Manufacturing Industry* (Rees 1972 [1802]:3:Plate 33).

Essentially all mills were built similarly with the only major visible difference being the wheel which would be undershot, breast, or overshot. The type of wheel would depend on the height of the falls. An undershot wheel, such as is found at 38LX187 normally accommodates a fall of between 3 and 8 feet, while the others are used on greater falls, ranging up to 36 feet. This suggests that the mill had a rather small dammed pond and the fall may have been only three or four feet. The water is typically supplied to the wheel by a flume which directs the flow to the wheel paddles. The size of the wheel depends not only on the height of the fall, but also on the size of the grinding stones (Evans 1840).

Appletons' Cyclopaedia of Applied Mechanics provides additional detail from just before the turn of the century, noting that undershot wheels typically ranged in size from 10 to 25 feet in diameter, with the floats (or paddles) being from 14 to 16 inches apart at the circumference and from 24 to 28 inches deep, suggesting that the wheel at 38LX187 was on the small range of the scale. It is noted that:

> In Poncelet's undershot wheel the floats are curved — usually in circular arcs — and so placed that the hollow of the curve is presented to the entering water (Benjamin 1895:918).

The presence of the mill wheel and gearing in this location suggests that the pond was situated further to the south and that it probably was fairly small, perhaps operating for only short durations. It also suggests that the mill building was situated on the west side of the creek. The absence of historic materials may be the result of the mill having been destroyed by flooding. Alternatively, mills (representing special use industrial sites) may result in little accumulation of domestic refuse.

Also present at the site is a hole, about 3 feet in diameter and about 3 feet in depth, apparently associated with a ditch feature originating in the field. This does not appear to have any relationship with the mill, although it may be associated with the tannery thought to have operated at the site.

This site is recommended as potentially eligible for inclusion on the National Register. Additional survey and historical research are necessary to fully evaluate the potential of the site. The historical research should not only include an effort to find local residents familiar with the mill and its operation, but also involve a detailed title search and examination of the industrial census data for Lexington County. The archaeological data should include the excavation of dispersed 5-foot units in the effort to identify structural remains associated with the mill, combined with a metal detector survey of the western bank and mapping of the various site components. This additional research should allow a complete evaluation of the site's ability to answer questions concerning the mill's operation and function in the local community.

As an alternative to additional testing needed to evaluate the site's eligibility, the City of Lexington may select to re-route this section of the interceptor line to the east side of Twelvemile Creek, which was surveyed from the Mineral Springs bridge south and west to about 50 feet past site 38LX151. This would succeed in avoiding both 38LX151 and 38LX187.

Sites Not Recovered

Two archaeological sites were reported to be in the general vicinity of the Twelvemile Interceptor corridor — 38LX153 and 38LX155. Neither site, however, was encountered in this study.

38LX153

This site was reported by Drucker (1977:24-25) to be a sparse scatter of quartz flakes found along a cattle path. The site was situated about 3600 feet southeast of the junction of US 378 and S-485 at the west end of a pasture, 120 feet north of the creek. In addition, the site is noted to probably represent material eroding out from a location further up slope (38LX153 site file, S.C. Institute of Archaeology and Anthropology, University of South Carolina).

The site was not recovered from any of the shovel testing nor was any evidence of it found during the pedestrian survey. This indicates that the site is outside the survey corridor.

38LX155

This site was reported by Drucker (1977:25-26) to be a heavy scatter of quartz flakes found along a farm road and in adjacent gullied areas. Although the site location is listed as non-identifiable on the site form, the maps accompanying Drucker's report reveal that it is situated about 2400 feet northeast of the Mineral Springs Road (S-104) crossing of Twelvemile Creek. In addition, the site map accompanying the site form reveals that the site is situated about 100 to 200 feet north of the creek, at the edge of the upland slopes. It is very specifically shown as not being in what is termed the "marsh" along the edge of the creek (38LX153 site file, S.C. Institute of Archaeology and Anthropology, University of South Carolina).

The site was not recovered from any of the shovel testing along the project corridor. This, in conjunction with the available site information suggests that the site is situated outside the survey corridor.

CONCLUSIONS

Introduction

The survey of the project area was conducted using a combination of shovel testing at 100 and 200 foot intervals, depending on soil conditions, coupled with pedestrian survey where ground visibility permitted. A total of five archaeological sites were identified in the project area. Two additional sites are through to be outside the project area.

The survey was hindered by the frequent absence of a clearly defined corridor and, in a few areas, the apparent presence of multiple corridors. Although the entire project area has been examined, the contractor should be warned to be especially diligent in reporting the discovery of any archaeological remains or materials. If scatters of historic or prehistoric materials are encountered construction should be halted and the site should be brought to the attention of the State Historic Preservation Office.

As a result of the intensive survey of the 8.4 mile long, 50-foot wide Fourteenmile Creek Interceptor corridor no archaeological sites were encountered. Throughout the project the centerline is situated within 20 to 30 feet of the creek edge, typically in areas of poorly drained soils. Much of the corridor was dominated by wetland vegetation, such as ferns and bottomland forest. This area is not particularly attractive for prehistoric or historic occupation. In addition, the creek is generally too small, with too little flow to support mill operations (he one mill identified on the creek through historical research is situated on the side opposite the survey corridor).

The intensive survey along the 4.2 mile long, 50-foot wide Twelvemile Creek Interceptor corridor is similar in many ways to the Fourteenmile corridor — much of the survey area was in the low, swampy first terrace. Much of the study area exhibited frequent scouring by flooding. The creek, however, is wider, has a greater flow, and exhibits several areas of well-developed floodplains. The project area also passes through several areas of high and relatively well drained soil. As a result, three archaeological sites will be impacted by this segment of the project — 38LX151, 38LX176, and 38LX187. Site 38LX176 has been previously recommended eligible for inclusion on the National Register. Sites 38LX151 and 38LX187 are recommended as potentially eligible for inclusion on the National Register.

The survey along the 12.5 mile force main found much of the corridor to be situated in areas which are already heavily disturbed — road shoulders, powerline easements, and even down the centerline of roads. Two archaeological sites were identified in this corridor — 38LX83 and 38LX150. Site 38LX83 has been previously recommended as eligible for inclusion on the National Register. Site 38LX150 is recommended as not eligible for inclusion on the National Register.

Recommendations

We believe that site 38LX83 has been previously found to be eligible for inclusion on the National Register of Historic Places, although it has not been nominated. The site consists of the remains of defensive earthworks erected by Confederate forces to guard the southern approach to Columbia. Although damaged by looting, as well as the excavation of a series of drainage ditches for upland cultivation, the site remains one of the last vestiges of Columbia's Civil War history. The proposed project involves placing a 30-inch metal pine down the center-line of Old State Road, leaving this corridor only to pass on the west side of the Congaree River Bridge before returning to the center-line of the road. This undertaking will not impact any of the Civil War earthworks, nor will it have any impact, once construction is completed, on the view or appearance of the site

area. Consequently, this undertaking would appear to have no effect on the archaeological site and no additional investigations are recommended. The only management activity recommended is a stipulation warning the contractor that he is passing through a sensitive archaeological site and to avoid construction staging or other activities outside the project corridor.

Site 38LX150 is recommended as not eligible for inclusion on the National Register of Historic Places based on the absence of materials in shovel tests, the thin A horizon soils encountered in shovel tests, the presence of erosional gullies in the site area, and the low density and diversity of archaeological materials in even the surface collections. If this assessment is accepted by the State Historic Preservation Office, no additional management activities are necessary at this site.

Site 38LX151 is recommended as potentially eligible for inclusion on the National Register of Historic Places based on the diverse assemblage, the clearly defined central site core, and the density of archaeological remains. We recommend the use of dispersed 5-foot test units to further explore the site area in an effort to locate features, possible intact midden, and a greater range of archaeological materials. Based on our understanding of the site, about 10 such units should provide adequate coverage to allow the site's potential to address a range of significant research questions to be addressed. As an alternative to additional testing, the City of Lexington may desire to relocate their corridor to either the opposite side of Twelvemile Creek (which was surveyed in anticipation of such a move).

Site 38LX176 has been previously recommended as eligible for inclusion on the National Register as a mill site with an associated road system. During the current survey the only aspect or component of this site which was clearly identified in the project corridor is a roadway. Unfortunately, this is also one of those areas where the corridor was poorly defined, perhaps with several routes having been flagged at different times. Nevertheless, we believe that the project will have minimal impact on the site if (1) the project construction corridor to be made as narrow as feasible, (2) if the contractor is required to clear the project corridor in this area by hand (rather than allowing mechanical clearing), (3) if the road is documented through black and white photography, and (4) if a topographic map of the roadway exposed by the project (and up to 100 feet on either side) is made by the City of Lexington. These steps should recover the useful information and allow the project to move forward.

Site 38LX187 is recommended as potentially eligible for inclusion on the National Register of Historic Places based on the presence of mill machinery and remains of the mill dam. Additional archaeological testing, however, is necessary to determine if any mill structures are present and if any further information concerning the mill's operation or physical layout can be determined. Historical research is necessary to evaluate the mill's economic importance to the community and to determine if there is an oral history still present which can contribute to our understanding of the mill's operation. The archaeological excavations may require upwards of eight 5-foot units, while the historical research would require investigation of resources at the Lexington County Court House, the S.C. Department of Archives and History, and the local community. As an alternative to additional testing, the City of Lexington may desire to relocate their corridor to either the opposite side of Twelvemile Creek (which was surveyed in anticipation of such a move).

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